UCL CANCER DOMAIN

UCL

UCL Cancer Symposium

Wednesday 17 May 2023

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Welcome

Dear Colleagues

Welcome to the 2023 UCL Cancer Symposium, brought to you by the UCL Cancer Domain.

Our annual challenge (a grand challenge) is to capture the scale and scope of cancer-relevant research at UCL and squeeze it into one day. This year we've gone big, with twenty speakers delivering short-format presentations, aiming for maximum impact. We're proud to see the line-up, representing so many disciplines and real excellence at all stages of the academic career pathway, demonstrating why UCL is the cancer research powerhouse that it is.

Our opening session features five flagship research programmes that are already delivering patient benefits and changing clinical practice. Later sessions follow UCL's Rethinking Cancer themes, which will be introduced by Professor Tariq Enver with an overview of our whole portfolio.

- **Harnessing Our Biology** – represented today by our newly funded, and very exciting, Cancer Grand Challenges, major international partnerships that recognise and capitalise on UCL's world-leading expertise.
- **Engineering Better Outcomes** – incorporating the application of advanced computation and modelling to our understanding of cancer biology, diagnosis and treatment.
- **Leaving no-one Behind** – a wider perspective including pollution and lung cancer, social determinants of health, and lessons from infectious disease surveillance.

Our Early Careers Network brings you oral and poster presentations, which are always popular and a great opportunity for junior researchers to showcase their work and make new connections. Please take the time to visit the posters and capitalise on the networking opportunity.

We'd like to thank the sponsors for making the event possible. Please do visit the commercial sponsor desks during the breaks.

The day promises to be a showcase of ambitious and impactful cancer research. We hope it provokes discussion and stimulates new research collaborations. Enjoy!

UCL Cancer Domain co-chairs

Professor Daniel Hochhauser
Professor Alison Lloyd
Professor Gary Royle

Programme

Kennedy Lecture Theatre, UCL Great Ormond Street Institute of Child Health

Brought to you by the UCL Cancer Domain, connecting multidisciplinary cancer research across UCL

09:00 – 09:30	**Registration**
09:30 – 09:35	**Welcome and Introductions**
	Professor David Lomas, Vice-Provost (Health) and **Professor Daniel Hochhauser**, Co-Chair, UCL Cancer Domain
09:35 – 11:15	**Session 1 – Major Study Updates**
	Chair: Dr Shibani Nicum, Associate Professor in Medical Oncology, Faculty of Medical Sciences
	Professor Mark Emberton, Dean, Faculty of Medical Sciences **Re-IMAGINE – the gateway to a biopsy-free future?**
	Professor Gert Attard, Chair of Medical Oncology/Honorary Consultant, UCL Cancer Institute, Faculty of Medical Sciences **Optimising first-line systemic treatment for advanced prostate cancer**
	Dr Maria Hawkins, Professor of Radiation Oncology and Honorary Consultant, Faculty of Engineering Science **Protons - opportunities to develop new treatment**
	Dr Ariana Huebner, Cancer Genome Evolution Research Group, Cancer Research UK Lung Cancer Centre of Excellence, UCL Cancer Institute, National Cancer Imaging Translational Accelerator (NCITA) **TRACERx understanding the past to predict the future**
	Professor Shonit Punwani, Professor of Magnetic Resonance and Cancer Imaging (UCL), Honorary Consultant Radiologist (UCLH) and Chair of the National Cancer Imaging Translational Accelerator **National Cancer Imaging Translational Accelerator (NCITA)**
11:15 – 11:45	**Networking & Poster Break**
11:45 – 11:55	**Rethinking Cancer – Communications framework for cancer at UCL**
	Professor Tariq Enver, Director, UCL Cancer Institute, Cancer Lead, UCLP AHSC, Lead, CRUK City of London Centre

11:55 – 12:40	**Session 2 – Cancer Grand Challenges –Harnessing our Biology**

Chair: Dr Martin Pule – Grand Challenges Overview

Dr Mariam Jamal-Hanjani, Senior Clinical Lecturer and Honorary Consultant in Translational Lung Oncology, Faculty of Medical Sciences

The study of extrachromosomal DNA and cachexia in metastatic disease

Dr Karin Straathof, Associate Professor Tumour Immunology, UCL Cancer Institute & Honorary Consultant Paediatric Oncology, Great Ormond Street Hospital

Next Generation engineered T cells for childhood solid tumours

12:40 – 13:10	**Early Career Speaker Session**

Chairs: Dr Pilar Acedo, Co-chair UCL Cancer Domain Early Careers Network and Dr Ilona Kubajewska, Co-chair UCL Cancer Domain Early Careers Network

Andrés Garcia-Sampedro, Institute for Liver & Digestive Health

Immuno-oncology biomarkers for improved diagnosis of cholangiocarcinoma in primary sclerosing cholangitis: insights from the inflammatory and fibrotic tumour microenvironment.

Daniel Jacobson, Department of Pathology, UCL Cancer Institute

Modelling the interactions between DNA repair and inflammation offers new insight into breast cancer treatment

Snigdha Sen, Centre for Medical Imaging, Department of Computer Science

Non-invasive Microstructural Parameter Estimation with Deep Learning for Prostate Cancer

13:10 – 14:10	**Lunch & Poster Break**
14:10 – 15:50	**Session 3 – Computational Cancer – Engineering Better Outcomes**

Chair: Professor Philip Luthert, Professor of Pathology, UCL Institute of Ophthalmology, Faculty of Brain Sciences

Dr Benjamin Hall, Royal Society Research Fellow, Department of Medical Physics and Biomedical Engineering, Faculty of Engineering Science

Evolutionary ratchets and cancer fate selection throughout stages of carcinogenesis

Dr Catarina Veiga, Senior Royal Academy of Engineering Research Fellow, Centre for Medical Image Computing, Department of Medical Physics & Biomedical Engineering, Faculty of Engineering Science

Medical imaging and modelling in radiotherapy planning, verification and follow-up

	Dr Kevin Litchfield, Principal Research Fellow, Faculty of Medical Sciences **Understanding the anti-tumour immune response through reverse translation** **Dr Maria Secrier**, Lecturer in Computational Biology, Faculty of Life Sciences **Genomic and digital pathology approaches to elucidate G0 arrest states in cancer** **Dr Adam Levine**, NIHR Academic Clinical Lecturer in Histopathology, UCL Cancer Institute and UCLH Department of Cellular Pathology **Natural language processing of histopathology reports with a focus on immunohistochemistry**
15:50 – 16:20	**Networking & Poster Break**
16:20 – 17:40	**Session 4 – Cancer: A Wider Perspective – Leaving no one Behind**
	Chair: Professor Yanlan Mao, Professor of Developmental Biophysics, and Deputy Director, Institute for the Physics of Living Systems, UCL LMCB **Professor Peter Goldblatt,** Senior Advisor, UCL Institute of Health Equity **Social determinants of health and health inequalities** **Dr William Hill**, Postdoctoral Fellow, Cancer Evolution and Genome Instability lab, The Francis Crick Institute **Lung Cancer Promotion by Air Pollutants** **Professor Rachel McKendry**, The London Centre for Nanotechnology and Division of Medicine, UCL and Director of the i-sense EPSRC IRC in Early Warning for Infectious Diseases and AMR **Harnessing advanced materials and machine learning for early disease detection** **Professor Simon Walker-Samuel**, Vice Dean (Research), Faculty of Medical Sciences and Co-Director, Centre for Computational Medicine **Combining mathematical modelling, imaging and machine learning to better understand barriers to successful cancer therapy**
17:40 – 17:50	**Prize Giving & Closing Remarks**
	Professor Geraint Rees, Vice-Provost (Research, Innovation and Global Engagement)
17:50 – 18:30	**Networking Drinks Reception**

Session 1 – Major Study Updates

Chair: Dr Shibani Nicum

Shibani Nicum is an Associate Professor in Medical Oncology and Honorary Consultant Oncologist at University College London. She specialises in the treatment of women with ovarian and other gynaecological cancers and is the Chair of the National Cancer Research Institute Gynaecological Group and Lead for Gynaecological Trials at the Cancer Research UK and UCL Cancer Trials Centre. Her research interests are in BRCA mutated cancers and the development of novel therapies in order to improve and personalise patient care. Dr Nicum is also the Chief Investigator of several international and national trials, including the ICON9 and OCTOVA trials.

Professor Mark Emberton

Mark Emberton is Professor of Interventional Oncology within the Division of Surgery and Dean of the Faculty of Medical Science at University College London. He is clinically active and holds the position of Honorary Consultant Urologist at University College London Hospitals NHS Trust where he works as a specialist in prostate cancer.

Professor Emberton's academic work has focused on developing novel diagnostic strategies and new therapies for men with prostate cancer. His research has resulted in the transformation of both the diagnostic and therapeutic pathways. These have been incorporated into international guidelines.

Professor Emberton has also published over 500 peer review papers, holds a large grant portfolio, and lectures widely around the world and holds international honorary professorships. He is also a founding Pioneer of the charity Prostate Cancer UK.

Professor Gerhardt Attard

Professor Gert Attard is a John Black Charitable Foundation Endowed Chair in Urological Cancer Research at University College London. He is Team Leader of the Treatment Resistance Group at the UCL Cancer Institute and a medical oncology consultant treating advanced prostate cancer at UCLH. He graduated with a degree in Medicine from the University of Malta in June 1999, and in 2010 obtained a PhD in Medicine from the Institute of Cancer Research, University of London. He was awarded a Cancer Research UK clinician scientist fellowship in 2013 and a senior investigator award in 2017.

Professor Attard's main research interests are dissecting treatment resistance, currently with a focus on plasma DNA analysis, in order to inform on the development of novel therapeutics and biomarkers for castration resistant prostate cancer (CRPC) and improving treatments for patients presenting with metastatic prostate cancer. He is an experienced clinical trialist and a

co-author of more than 250 peer-reviewed manuscripts, including several important papers on advanced prostate cancer (H index, 77).

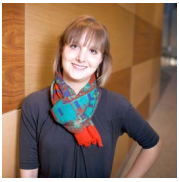
Most notably Professor Attard's work has led to the development of abiraterone acetate for prostate cancer and recently its approval for high-risk localized disease. Professor Attard's awards over the years include the ASCO Foundation Annual Merit Award in 2007, Prostate Cancer Foundation Young Investigator Award in 2008, the AACR-GlaxoSmithKline Outstanding Clinical Scholar Award in 2009, the Medical Research Society/Academy of Medical Sciences Sue McCarthy Prize in 2010 and the McElwain award in 2010. He received the Cancer Research UK Future Leader Award in 2017 and the Agilent Future Thought Leaders award in 2022. Prof Attard sits on a number of advisory boards and the editorial board of Annals of Oncology.

Dr Maria Hawkins

Maria Hawkins is Professor of Radiotherapy at University College London, having been an MRC Group leader in the Oxford Institute for Radiation Oncology, University of Oxford from 2012-2019.

Professor Hawkins is a clinician scientist in precision radiotherapy committed to improving outcomes through research investigating effects in normal tissue and novel agents - novel radiation combinations. She is now the clinical director of CRUK City of London RADNET Radiation Research Unit, and director of translational research at UCL/UCLH and proton centre.

Professor Hawkins has developed and is currently testing in clinical trials, novel radiotherapy including protons in cancers of unmet need (oesophagus pancreas, hepatobiliary) and findings of radiobiology research are being investigated in two national studies. She is the Co-Investigator of four CRUK funded trials including radiation novel agents combination in phase I (in oesophageal cancer), and the preoperative proton vs photon radiation surgery and immune treatment study PROTEIUS.



Dr Ariana Huebner

Ariana Huebner recently completed her PhD on characterizing cancer genome evolution in metastasis with Dr. Nicholas McGranahan and Prof. Charles Swanton at UCL and the Francis Crick Institute. She is currently continuing as a postdoctoral research fellow with Dr. Nicholas McGranahan. Before starting her PhD, she also studied Mathematics at the University of Freiburg, Germany and holds a master's degree from UCL.

Dr Heubner's research has focused on investigating subclonal selection and its impact on the metastatic process as well as understanding how and when cancers metastasize. She has led the processing and analysis of the TRACERx paired primary metastasis cohort and has also worked on integrating the PEACE cohort, a national research autopsy program which employs extensive sampling to understand the processes involved in metastatic disease.

Professor Shonit Punwani

Shonit Punwani is Professor of Magnetic Resonance and Cancer Imaging and Consultant Radiologist at UCLH. His medical training, undertaken at UCL, was supplemented with a PhD in MRI Physics. He completed post-graduate training in Medicine at Northwick Park, before training as a radiologist at UCLH. He was awarded a Walport NIHR Clinical Lectureship, before being appointed as a Senior Lecturer at UCL and Consultant Radiologist at UCLH.

He leads the 3T MRI research facilities that provide the infrastructure for imaging trials at UCLH. He is the research and development lead for radiology at UCLH, responsible for the provision of imaging services for clinical trials at UCLH. He is chair of the National Cancer Imaging Translational Accelerator (a multi-institutional collaboration dedicated to the support of clinical trials involving new/novel imaging methods).

He has a specialist clinical and research interest in the application and development of local and whole-body quantitative and functional MRI methods for imaging prostate cancer.

Rethinking Cancer – Communications framework for Cancer at UCL

Professor Tariq Enver

Tariq Enver is Professor of Stem Cell Biology at the UCL Cancer Institute. Professor Enver joined UCL in 2010 as Head of the Department of Cancer Biology and subsequently was appointed Vice Dean Research of the Faculty of Medical Sciences. Professor Enver became the Director of UCL's Cancer Institute in 2013 and is also co-Director of the CRUK UCL Centre, a focal point for cancer research at UCL, bringing together researchers and clinicians from UCL and its partner hospital trusts to accelerate cancer research discoveries. He is the lead for the Cancer Research UK City of London Centre, which brings together world-leading researchers from UCL, King's College London, Queen Mary University of London and the Francis Crick Institute to enable London to become a global centre of excellence for biotherapeutics. He leads the City of London RadNet programme and the CRUK City of London Centre's Radiation Research Unit, which forms part of the National Radnet programme. Additionally he leads the Cancer theme of the Academic Health Sciences Centre, which spans translational cancer activities across UCL and Queen Mary University of London including the Barts Cancer Institute, the London School of Hygiene & Tropical Medicine and the Francis Crick Institute.

Professor Enver studies the genetic circuitry of stem cells, how this may be utilized in the context of transplantation and regenerative medicine and crucially how it is corrupted in the pathogenesis of cancer, particularly in the context of the origins, evolution and targeting of childhood leukaemia. He is a member of the European Molecular Biology Organization (EMBO), the 1000 Talents program in China and Visiting Professor at Lund University in Sweden. He sits on the CRUK Science Committee, Bloodwise Research Committee and is co-director for the Centre for Genomic Regulation in Barcelona.

Session 2 – Cancer Grand Challenges – Harnessing our Biology

Chair: Dr Martin Pule – Grand Challenges Overview

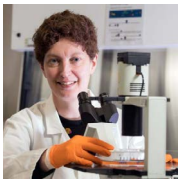
Martin Pule is Clinical Associate Professor in the Dept. of Haematology at the UCL Cancer Institute and Honorary Consultant in Haematology at University College London Hospital. Dr Pule's research focuses on many aspects of genetic engineering of T-cells for cancer treatment, with a particular focus on chimeric antigen receptors (CARs). He entered the T-cell engineering field in 2001 as a Fulbright Scholar at the Center for Cell and Gene Therapy at Baylor College of Medicine, Houston.

Dr Pule was the first to describe third generation forms of CARs and described one of the first clinical studies of CARs, which showed efficacy in a solid cancer. Martin Pule is Director of the UCL Chimeric Antigen Receptor (CAR) programme. He holds a Bachelor of Medicine and Bachelor of Surgery from University College Dublin and is a Fellow of the Royal College of Pathologists.

Dr Mariam Jamal-Hanjani

Mariam Jamal-Hanjani obtained her degrees in Physics then Medicine at UCL after which she completed her general medical and oncology training in London. In 2012 she was awarded a Cancer Research UK Fellowship to complete her PhD studies in Cancer Genetics for which she was awarded the McElwain and Sylvia Lawler Scientific Prizes. In 2014 with Charles Swanton, she set up the UK-wide TRACERx lung cancer evolution study, and in 2016 she was awarded an NIHR Clinical Lectureship during which she established the UK-wide PEACE research autopsy programme.

In 2018, Dr Jamal-Hanjani was appointed as Senior Clinical Lecturer and Honorary Consultant in Translational Lung Oncology in the CRUK Lung Cancer Centre of Excellence, UCL Cancer Institute. In 2021 she was awarded a CRUK Career Establishment Award to study the biological processes driving death in lung cancer. She is a co-investigator on two Cancer Grand Challenges focussed on the study of extrachromosomal DNA and cachexia, and her lab is focussed on studying tumour evolution and immune escape in the metastatic setting, and catabolic mediators of cancer cachexia.



Dr Karin Straathof

Karin Straathof graduated with both a medical degree and Biomedical Sciences degree from Leiden University, the Netherlands. Her PhD at Baylor College of Medicine (Houston, USA) was on adoptive T cell immunotherapy for Epstein-Barr virus associated malignancies. She trained in paediatrics and subsequent subspecialty paediatric oncology in London and is now an honorary consultant paediatric oncologist at Great Ormond Street Hospital.

With award of her Wellcome Trust Clinician Scientist Fellowship, Dr Straathof has established her own research group at the UCL Great Ormond Street Institute of Child Health and the UCL Cancer Institute. Her research interest is T cell-based immunotherapy for childhood solid tumours. Her work led to one of the first phase I clinical studies of CAR-T cell therapy for children with relapsed or refractory neuroblastoma. Her research group now develops cellular therapies incorporating advanced engineering approaches aiming to achieve sustained activity against childhood solid tumours with further clinical studies due to open in 2023. Dr Straathof is work package leader in the NexTGen Cancer Grand Challenge and lead for the Childhood Cancer Theme of the Cancer Research UK City of London Centre.

Early Career Researcher Speakers

Andrés Garcia-Sampedro

Andrés Garcia-Sampedro is a PhD student at University College London (UCL) who holds a BSc (Honours) in Biotechnology from the Polytechnic University of Madrid (Spain) and an MSc in Nanotechnology & Regenerative Medicine from UCL. During his MSc, he studied polymeric nanoparticles based on natural polymers as targeted delivery nanosystems for the treatment of pancreatic cancer. Currently, he is undertaking his PhD under the supervision of Professor Stephen Pereira and Dr Pilar Acedo, focusing on discovering and validating a panel of serum and tissue-specific biomarkers for the early detection of cholangiocarcinoma in patients with primary sclerosing cholangitis. Additionally, he is developing clinically relevant in vitro co-culture 3D models that better mimic the in vivo setting. Whilst performing his PhD, Andrés also works as a team member of the ADEPTS clinical study, which aims to investigate blood, urine and tissue biomarkers together with early symptoms of patients with bile duct cancer, pancreatic cancer and neuroendocrine tumours of the pancreas. This study aims to develop new tests to diagnose these cancers at an early stage.

Daniel Jacobson

Daniel Jacobson is a final-year PhD student in computational cancer genetics based jointly between UCL Genetics Institute and the UCL Cancer Institute. He joined the UCL-Birkbeck MRC Doctoral Training Partnership in 2019 after obtaining his MSci in Natural Sciences from UCL, specialising in molecular biology and statistics. In 2020 he joined the laboratories of Dr Maria Secrier and Professor Jasmin Fisher.

Daniel's research focuses on characterising DNA repair deficiencies in breast cancer, and the therapeutic potential presented by how this alters modulation with the tumour microenvironment. This has involved the development of methods for multi-scale characterisation of homologous recombination deficiency and modelling of its association with inflammatory signalling responses. Additionally, he is a frequent science communicator whose writing has been featured in the Progress Education Trust's BioNews newsletter, the EACR Cancer Researcher publication, and the UCL Kinesis magazine.

Snigdha Sen

Snigdha Sen is a 2nd year PhD student at the Centre for Medical Imaging at UCL. She joined UCL via the i4health CDT (EPSRC Centre for Doctoral Training in Intelligent, Integrated Imaging in Healthcare) in 2020. As a part of the CDT, she completed an MRes in Medical Imaging, before beginning her PhD work, supervised by Dr. Laura Panagiotaki. Prior to this, she received an MPhys degree in Physics with Theoretical Physics from Imperial College London. Her primary area of interest is non-invasive prostate cancer diagnosis using diffusion MRI and computational modelling. Her work thus far has involved using diffusion MRI models to characterise elusive false positive cases of prostate cancer, and developing deep learning methods for fitting these models.

More recently, she has been focusing on self-supervised learning techniques to improve parameter estimation using the VERDICT model for prostate characterisation. In the future, she hopes to extend her work beyond the prostate, developing models to characterise tissue in other organs and investigating novel deep learning strategies for model selection.

Session 3 – Computational Cancer – Engineering Better Outcomes

Chair: Professor Philip Luthert

Phil Luthert is Professor of Pathology in the UCL Institute of Ophthalmology having trained in medicine at St Georges Hospital following preclinical studies at UCL. After some time in general medicine, Professor Luthbert moved to the Institute of Psychiatry and trained as a neuropathologist with wide-ranging interests including the neuropathology of dementia, movement disorders and autism. In 1994 he moved to the chair of pathology at the Institute of Ophthalmology where he has been ever since.

Professor Luther's research interests have included inherited and acquired, age-related retinal degenerations. More recently his focus has been on the use of computational approaches to understand pathogenesis of complex disease with a major interest in how shifts in metabolism relate to the emergence of age-related disease. He was a founding co-chair of the eResearch Domain and is currently the lead for the Digital Research Community activities of ARC.

Dr Benjamin Hall

Ben Hall is a computational biologist and Royal Society Research Fellow in the department of medical physics and biomedical engineering, at UCL. Dr Hall leads a program on "Modelling the decision processes of cancer", where his team develop computational models of the aging tissue and carcinogenesis. He holds a Royal Society University Research Fellowship, and work in his group is funded by the MRC, Microsoft Research, and the Royal Society.

Prior to his current position Dr Hall worked as an MRC Investigator, leading a programme at the MRC Cancer Unit in the University of Cambridge. Before that he worked with Dr Jasmin Fisher at Microsoft, constructing executable models of organ development in C. elegans and developing tools for formal verification in biology. He completed his DPhil and previous post-doctoral positions in molecular modelling at Oxford and UCL.

Dr Catarina Veiga

Catarina Veiga received her BSc in Physics from the University of Minho and an MSc in Medical Physics from the University of Porto. She then completed her PhD at University College London in 2016 on the topic of adaptive radiotherapy with cone-beam computed tomography (CBCT) and deformable image registration.

Dr Veiga spent 6-months as a visiting scholar at University of Pennsylvania, where she worked on the commissioning of the world's first CBCT system and developed workflows for adaptive proton therapy in lung cancer. Shortly after she joined the Centre for Medical Image Computing at UCL as postdoctoral researcher developing methods to quantify radiation-

induced lung damage, a common side-effect of lung cancer radiotherapy, on computed tomography (CT) imaging.

In 2018 Dr Veiga was awarded a prestigious 5-year Royal Academy of Engineering Fellowship. This tenure-track fellowship has enabled her to start building an inter-disciplinary research team with the overarching aim of reducing the incidence of harmful in later life associated with radiotherapy during childhood. She is currently leading a variety of projects to (1) develop novel methodologies for 3D risk prediction that can be applied to large cohorts of patients, (2) using models of radiation-induced second cancers risk to assess emerging radiotherapy techniques (such as proton therapy), and (3) developing image-guidance for paediatric proton therapy and (4) improve calculation and records of patient-specific radiation dose after radiotherapy for epidemiological studies.

Dr Kevin Litchfield

Kevin Litchfield is a group leader at the UCL Cancer Institute, having trained in mathematics and bioinformatics, and worked in the pharmaceutical industry at Novartis Oncology.

Dr Litchfield completed a PhD in cancer bioinformatics and completed his postdoctoral training with Professor Charles Swanton at the Francis Crick Institute. His research is currently specialising in immune-oncology bioinformatics, biomarker development and drug target identification.

Dr Maria Secrier

Maria Secrier trained in Bioinformatics at Jacobs University, graduating in 2009 and subsequently embarking on a PhD in Computational Biology with Reinhard Schneider and Wolfgang Huber at the European Molecular Biology Laboratory in Heidelberg (Germany).

After the completion of her PhD in 2013, Dr Secrier worked with Simon Tavaré and Rebecca Fitzgerald on the genomics of oesophageal cancer as a postdoc at the CRUK Cambridge Institute and Bye-Fellow at the University of Cambridge. She also acquired experience in immuno-oncology and new target discovery as a Senior Scientist at AstraZeneca, before joining UCL as a lecturer in 2017. At the UCL Genetics Institute, Maria leads an interdisciplinary research group in Computational Cancer Biology, which focuses on understanding cancer evolution in its environmental niche by developing machine learning and data integration methods for complex multi-omics and imaging datasets. A primary interest in the group is how cell fate and plasticity shapes tumour progression and response to treatment.

Dr Adam Levine

Adam Levine is an NIHR Academic Clinical Lecturer in Histopathology in the Research Department of Pathology at UCL. Dr Levine graduated from UCL Medical School in 2016 having completed the UCL MBPhD Programme. As an undergraduate student, he was awarded the UCL Faculty of Life Sciences Medal and Prize. His PhD research focussed on the genetics of inflammatory bowel disease in multiplex families for which he was awarded the Cordwainers' Prize for Best MB/PhD Thesis.

Following medical school, Dr Levine completed foundation training on the Academic Foundation Programme and thereafter joined the Histopathology Specialty Training Programme. Dr Levine's postdoctoral research has included characterising the genetic architecture of membranoproliferative glomerulonephritis and intrahepatic cholestasis of pregnancy. As an Academic Clinical Lecturer, Dr Levine's programme of research combines his clinical experience in histopathology with his background in computational genetics. Current research endeavours include implementing natural language processing for the automated extraction of data from histopathology reports, studying genetic correlates of histomorphological variation and developing algorithms for the automated analysis of digital pathology images for diagnosis and prognostication.

Session 4 – Cancer: A wider perspective – Leaving no one Behind

Chair: Professor Yanlan Mao

Yanlan Mao is a Professor of Developmental Biophysics at the Laboratory for Molecular Cell Biology, University College London, and Deputy Director of UCL's Institute for the Physics of Living Systems. After receiving her BA in Natural Sciences at Cambridge University, she completed her PhD with Matthew Freeman at the MRC LMB in Cambridge on Drosophila cell signaling and epithelial patterning. During her postdoc with Nic Tapon at the CRUK London Research Institute (now Francis Crick Institute), she became interested in tissue mechanics and computational modeling approaches, and studied the role of mechanical forces in orienting cell divisions and controlling tissue shape.

In 2014, Professor Mao started her independent research group, and has continued to investigate the role of mechanical forces in tissue development, homeostasis and repair. She now holds an MRC Senior Fellowship, a Lister Institute Prize and an L'Oreal UNESCO Women in Science Fellowship. She was selected to join the EMBO Young Investigator Programme in 2018, and has received numerous awards for her work, including the Early Career Prize in Mechanobiology by the Biophysical Society, the BSCB Women in Cell Biology Early Career Medal, and the Royal Microscopic Society Life Sciences Medal.

Professor Peter Goldblatt

Peter Goldblatt is a senior advisor at the Institute of Health Equity a statistical advisor to the UK Department of Health and Social Care and an expert advisor to WHO European Office. His main activities are in the field of measurement and monitoring and contributing to European and other international project to review and monitor the social determinants of health.

Professor Goldblatt was previously the Chief Medical Statistician at the UK Office for National Statistics (ONS). He was seconded from ONS to UCL for the duration of the Strategic Review of Health Inequalities in England post-2010 (the Marmot Review). Following this review, he co-ordinated reviews of health inequalities in the WHO European Region, for WHO, and a review of health inequalities in European, for the European Commission (EC). He has subsequently contributed to several other projects, including European Parliament pilot projects, an EC project on drivers of health inequality, a UNDP project on inequalities in health and its determinants, a review of equity and health inequalities in the Americas, a review of 10 years on since the Marmot Review, a review of non-communicable diseases in Belgium, reviews of health inequalities in Norway and in local areas in England and several projects on the unequal impact of COVID-19 and its containment measures.

Dr William Hill

William Hill received his PhD at Cardiff University studying mouse models of early pancreatic cancer identifying how the body protects against cancer. Dr Hill then joined Professor Charles Swanton's lab in Autumn 2019.

Dr Hill's research focuses on early tumourigenesis in lung cancer and how environmental risk factors such as air pollution drive disease, with a particular focus on lung cancer in people who have never smoked.

Professor Rachel McKendry

Rachel McKendry is Professor of Biomedical Nanoscience and holds a joint position between the London Centre for Nanotechnology and Division of Medicine, University College London. She is Director of the £11M i-sense EPSRC IRC, a large interdisciplinary research collaboration in Early Warning Sensing Systems for Infectious Diseases.

Professor McKendry's research lies at the cutting edge of nanotechnology, telecommunication, big data, infectious diseases and public health. Recent breakthroughs span from ultra-sensitive quantum nanodiamond diagnostics for virus detection, nanomechanical sensors for antimicrobial resistance, to deep learning models for rapid testing in partnership with the Africa Health Research Institute in South Africa. Her team led a major strategic review of the global use of digital technologies for COVID-19.

Professor McKendry has won several awards for her research including the Royal Society Rosalind Franklin Award, Royal Society Wolfson Research

Professor Simon Walker-Samuel

Simon Walker-Samuel is Professor of Biophysics and Imaging at UCL in the Division of Medicine. Professor Walker-Samuel studied Physics at Surrey University and went on to complete a PhD in Biophysics at the Institute of Cancer Research in 2007. In 2013 he was awarded a Wellcome Trust Senior Research Fellowship.

Professor Walker-Samuel's research focus is the characterisation of the tumour microenvironment, principally using a range of biomedical imaging techniques. He has developed several novel molecular imaging techniques, including methods for measuring tumour cell size, tumour fluid dynamics and glucose metabolism. With key focus to translate new techniques into the clinic, he and his research group also work with pharmaceutical companies to assess the efficacy of novel anti-cancer therapies. He has recently founded the UCL Centre for Computational Medicine, a cross-faculty initiative that aims to address key challenges in medicine using cutting-edge computational methods. Merit Award and the Institute of Physics Paterson Medal. She also co-chaired the Digital Medicine Theme of the Topol Review of the NHS, 'Preparing the Healthcare Workforce to Deliver the Digital Future' and led the Rosalind Franklin Appathon.

Research Posters

1. **Pilar Acedo**
   Profiling immuno-inflammatory and serum biomarkers for the early detection of pancreatic cancer
2. **Zahra Ahmed**
   The clinical and biological relevance of prostate cancer cell lines. An integrated clinicomics approach to validating 45 cell lines against well characterised global patient cohorts.
3. **Mai Ngoc Bui**
   Non-homogeneous multi-state Markov models: A simulation scheme for evaluating cancer screening strategies.
4. **Kristine Bunayog**
   Investigating the synergistic effects of irreversible electroporation and cisplatin on patient-derived pancreatic cancer models
5. **Matthew A. Clarke**
   Predicting Personalised Therapies for Triple-Negative Breast Cancer using Computational Modelling
6. **Helena Coggan**
   Early effects of oncogenic mutation on lung stem cell behaviour
7. **Peter Embacher**
   Stochastic modelling of lineage correlations in glioblastoma cells to capture non-genetic heterogeneity
8. **Sara Escalera and Carolina San Pedro Liberal**
   EpCAM targeting elastin-like polypeptide-based nanoparticles combined with electroporation for the treatment of pancreaticobiliary malignancies
9. **Lucie Gourmet**
   Examining the role of mutualism in immune evasion
10. **Daniel Jacobson**
    Therapeutic insights into the homologous recombination-deficient tumour microenvironment in breast cancer
11. **Ilona Kubajewska**
    Tumour-responsive and site-activated nanomedicines for the targeted treatment of colorectal cancer.
12. **Grant Lauder**
    A new method to measure the range of mechanical force that tumours can exert on their surroundings
13. **Angela Lopez-Cortes**
    The BENCHISTA Project: International Benchmarking of Childhood Cancer Survival by Stage
14. **Alexandra Lubin**
    Identifying Novel Drivers of Clonal Selection in CEBPA-mutated AML
15. **Zoe Moon**
    Perceptions of cancer among UK Black Africans and Black Caribbeans: A systematic review

16. **David Osuna de la Pena**
    Intrinsic and extrinsic determinants of premalignancy in the airways
17. **Maria Rosado Rodriguez**
    Photochemical internalisation to enhance pancreatic cancer chemotherapy.
18. **Hugh Selway**
    Smoking and Somatic Evolution in the Healthy Human Lung
19. **Snigdha Sen**
    Non-invasive Microstructural Parameter Estimation with Deep Learning for Prostate Cancer
20. **Laura Soto**
    Radiation effects in glioblastoma: GBM cells undertake an astrocytic-mesenchymal-like state
21. **Sarah-Jane Stewart**
    Supporting women with breast cancer to adhere to adjuvant endocrine therapy: development and optimisation of the HT&Me web-app.
22. **Alexandra Tan**
    Understanding the Cellular Mechanisms of Cell Death in Pancreatic Cancer Models Following Irreversible Electroporation and Calcium Combination Therapy
23. **Anuja R Upadhyay**
    Exploring the Interplay of Renal Carcinoma Cells and the Biophysical Environment of Soft and Dense Collagen Type I Gels
24. **Karla Vuina**
    Active growth signalling promotes senescence and cancer cell sensitivity to CDK7 inhibition

Symposium Sponsors

LGC provides a uniquely large range of research chemicals manufactured by TRC, including APIs, SILs and bioactive molecules, such as modulators of kinases, angiogenesis, and apoptosis. LGC also offers an unparalleled collection of physiologically relevant cancer models from ATCC, including patient-derived organoids, reporter cells and diverse cell models

Sarstedt is one of the world's leading providers of laboratory and medical equipment, which develops, manufactures and distributes consumables in the field of medicine and research. Our company is known for its 'High quality, High-performance and Made in Germany' products and has an uncompromising commitment to customer requirements.

Stratech are not a multi-national super conglomerate biotech company, instead we are family run business dedicated to delivering exceptional product quality with unbeatable technical support. We are so confident that you will LOVE both our products and our technical support that we guarantee all our products with a full money back promise.

UCL Translational Research Office (TRO) is an integral part of UCL's biomedical research powerhouse. As an expert team of applied scientists and business developers, we support our researchers in realising their translational ambition by offering strategic advice and funding support and bridging the gap with industry to help establish collaborations that drive the pipeline of therapeutic, device and diagnostic innovations.

UCL Business Ltd (UCLB), is a wholly owned subsidiary of UCL. Working with UCL's world-renowned faculties and associated hospitals, it brings together exceptional ideas, innovations and industry to benefit society and the economy. UCLB's track record includes raising over £1.5 billion in investment for UCL spinouts.

Further Information

Location

- The event will take place in the Kennedy Lecture Theatre, UCL Institute of Child Health (ICH), 30 Guilford Street, London, WC1N 1EH. Please see the accessibility information here.
- Talks and presentations will take place in the ICH Kennedy Lecture Theatre
- Posters will be displayed in the ICH Winter Garden
- Lunch and refreshments will be served in the ICH Balcony and Winter Garden - Drinks reception will take place in the ICH Balcony

Connecting to Wifi

Before you start...

- You must be aware of and abide by the UCL Computing Regulations
- You must be aware of and abide by the JANET Acceptable Use Policy

Instructions

1. Select **UCLGuest** from your list of available Wi-Fi networks
2. Once connected, open a web browser and refresh your page
3. At the Welcome page (Fig.1) click **Go**
4. If you already have a The Cloud account, enter your email address and password and click Continue. If you do not have a The Cloud account, click Create Account to register (Fig.2)
5. After you have created a new account you will be connected to UCLGuest. You will also receive an email confirmation with your details.

Having trouble connecting?

For further instructions please see Wi-Fi troubleshooting & known issues.

Figure 1: Welcome to Sky Wi-Fi page

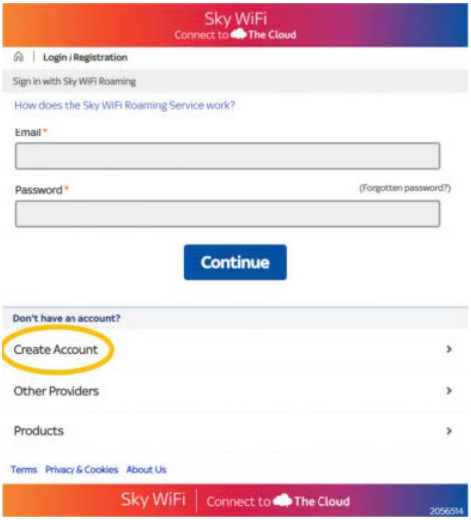


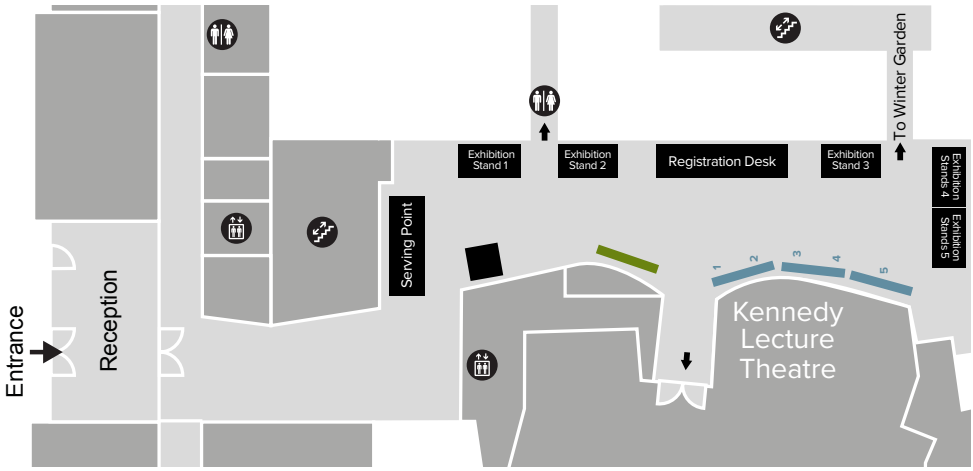
Figure 2: Sky Wi-Fi login and registration page

Cancel if you can't make it

Please cancel your place on Eventbrite as soon as possible if you are no longer able to join us in person. Dropping out without letting us know may lead to a huge amount of food waste.

Venue Layout and Poster Locations

Balcony Area
UCL GOS Institute of Child Health



- Toilets
- Lifts
- Stairs
- Dining table
- Seating
- Poster Boards (with Poster Number)
- Notice board
- Food station with dietary requirements e.g. gluten free

Winter Garden
UCL GOS Institute of Child Health