

Programme Brochure | 2020

OXFORD FUNDAMENTAL & TUMOUR IMMUNOLOGY PROGRAMME

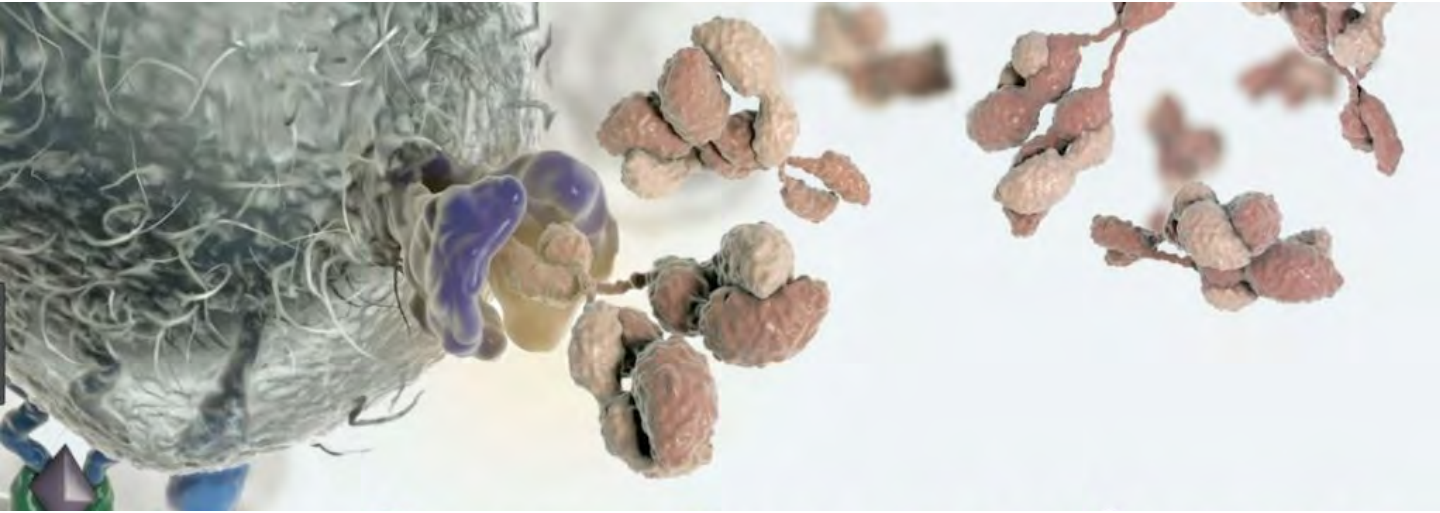
2020/8/31–2020/9/13

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01 | Programme Backgrounds



Over the last 15 years the importance of the immune system in tumour biology has become increasingly apparent with the successful implementation of curative immune-therapies into standard of care for many cancer patients. Increasingly, cancer researchers are required to be familiar with, critically assess, and integrate into their own programmes, immunological theories and assays. However, many have no formal immunology training (or perhaps didn't appreciate its importance in cancer biology when they did).

To address this, this programme aims to provide attendees with:

- An overview of the fundamental immunology topics that underpin many of the new/experimental immune-therapies and advances in our understanding of tumourigenesis.
- The limits of our understanding of the human immune system.
- Key topics within the fields of immune-oncology with regard to tumourigenesis, the tumour microenvironment and immune-therapies.

This programme is open to all cancer researchers across Oxford University, CRUK, the NHS OUH Foundation Trust as well as students who are at their senior grades of undergraduate or all grades of postgraduate in a well-recognized university, studying biology, medicine and healthcare related major. By attending this course, you can have the opportunity of discussion and networking as well as explore the new advancements related to *Fundamental Immunology*, *Tumour Immunology*, *Immune System*, *Immunological Methods* as well as *Immune-therapies* during this programme.



02 | Programme Highlights

Academic Courses and Lectures	<ul style="list-style-type: none">- This Programme is lead by Professor of Immunobiology in the Nuffield Department of Surgical Sciences, co-hosted by University of Oxford and CRUK oxford Centre.- You will have the opportunity to attend the Fundamental and Tumour Immunology workshop with researchers in the University of Oxford, CRUK, NHS as well as other related institutes.- Discussion and networking as well as exploration about the new advancements related to Immunology during this programme.- Student will also attend several lectures about immunology and related biomedical topics given by this programme lead professor.- <i>Certificate of Attendance</i> issued by the one of Oxford University member college;- You will have the opportunity to live in one of Oxford University member college.
Institutions / Enterprise Visit & Lectures	<p>Students will visit institutions listed below, and have the opportunity to attend lectures given by academic fellow of the institute, and founder, partner, director or lead scientist of the Enterprise:</p> <ul style="list-style-type: none">- Oxford spin out medical companies;- Francis Crick Institute;- Two labs in the University of Oxford;- Oxford University Innovation.
Transferable Skills	<p>Students are supposed to gain transferable skills through this programme:</p> <ul style="list-style-type: none">- Communicate effectively through oral presentations, computer presentations and written reports;- Learn management skills such as coordination, project design and evaluation and decision processes;- Transfer techniques and solutions from one area to another;- Learn independently with open-mindedness and critical enquiry;- Learn effectively for the purpose of continuing professional development;- Learning with Peers;- Gain teamwork skills and friendships.
Programme Excursions	<p>Students will have the wonderful opportunity to visit G5 universities campus, travel to some of the most amazing tourist attractions and historical landmarks in the United Kingdom.</p>



03 | Programme Instructors



Prof Jon Austyn

Jon Austyn is Professor of Immunobiology in the Nuffield Department of Surgical Sciences (NDS), Director of Graduate Studies (DGS) for NDS, and Director of the MSc taught course in Integrated Immunology at the University of Oxford. He is also a senior fellow of Wolfson College, Oxford. His current work focuses on how DC can be used or modulated for therapeutic purposes. For example, to boost vaccines against cancers and infectious diseases or to suppress autoimmune diseases and transplant rejection.

Guest Experts (to be confirmed)



Prof Paul Klennerman

Sidney Truelove Professorship of Gastroenterology, Nuffield Department of Medicine, University of Oxford; Fellow of Green Templeton College



Dr Carolina Arancibia

Research Fellow of the Kennedy Institute of Rheumatology at the University of Oxford, Translational Medicine Lead at the TGU; Research Fellow in Wolfson College, Oxford



Dr Clare Verrill

Associate Professor; Consultant in Cellular Pathology at Oxford University Hospitals NHS Trust



Dr Kerry Fisher

Lecturer in Department of Oncology, University of Oxford



Others Experts



04 | Provisional Agenda

Week One	Day 1 Mon	Day 2 Tue	Day 3 Wed	Day 4 Thu	Day 5 Fri	Day 6-7
	31-Aug	1-Sep	2-Sep	3-Sep	4-Sep	5-6 Sep
AM	Arrival in London Settling down in Oxford	Opening Ceremony & Ice Breaking	Lecture I: Tumor and Inflammation & Lecture II: Tumor Metabolism	Lecture I: Tumor and Immunology & Lecture II: Tumor Treatment and Transplantation	University of Cambridge visit	Free Weekends
PM		Oxford College Tour, Punting & Welcome dinner	Lab Visit I Fluorescent imaging of tumours in situ	Lab Visit II High-intensity focused ultrasound (HIFU) treatment of cancers		
EVE	Oxford	Oxford	Oxford	Oxford	Oxford	Oxford

Week Two	Day 8 Mon	Day 9 Tue	Day 10 Wed	Day 11 Thu	Day 12 Fri	Day 13-14
	7-Sep	8-Sep	9-Sep	10-Sep	11-Sep	12-13 Sep
AM	Coach to London Lab visit III Francis Crick Institute	Workshop day 1 Fundamental and Tumour Immunology	Workshop day 2 Fundamental and Tumour Immunology	Company Visit I OrganOx	Presentation judged by Jon and another colleague	Departure from the UK Arrival in China
PM	UCL & IC visits Coach back to Oxford			Company Visit II Oxford University Innovation	Free Afternoon & Farewell Dinner	
EVE	Oxford	Oxford	Oxford	Oxford	Oxford	



“Fundamental and Tumour Immunology Workshop”

Syllabus/Structure

Immune System In Health

An Introduction to Fundamental Immunology – Innate & Adaptive Immunity – Jon Austyn

- Innate immunity (dendritic cells, pattern recognition, PAMPs, DAMPs, hypersensitivity, inflammation)
- T cell-mediated immunity (conventional CD4 cells, CD8 cells, T cell polarization)
- Antibody mediated immunity (conventional B cells & TD responses)

TBC

An Introduction to Tumour Immunology – Jon Austyn

The role of the Immune System in Tumourigenesis

Infection and Cancer - Oncogenic Viruses – Paul Klennerman

- HPV, HepC, EBV, CMV

The Microbiome – Pathogenesis and Therapies – TBC

- The role of the microbiome in health and tumourogenesis.
- The therapeutic potential of the microbiome

Inflammation and Cancer – Carolina Arancibia?

TBC



“Fundamental and Tumour Immunology Workshop”

Syllabus/Structure

Immunological Methods
Flow Cytometry - ???
Histopathology and Digital Pathology – Dr Koelzer/Dr. Verrill
TBC
Immune-therapies
Checkpoint Inhibitors – Mechanism, Limitations & Resistance- TBC
Adoptive Cell Therapies 1 (CART cell therapies) – Mechanism, Limitations & Resistance – TBC
Adoptive Cell Therapies 1 (Dendritic cell therapies) – Mechanism, Limitations & Resistance – TBC
Therapeutic Antibodies - Mechanism, Limitations & Resistance – TBC
Oncolytic Viruses - Mechanism, Limitations & Resistance – Kerry Fisher
Anti-cancer Vaccines - Mechanism, Limitations & Resistance - TBC
TBC
Discussion Pannel
???? - TBC



05 | Agenda Description

University of Oxford



The University of Oxford is a collegiate research university in Oxford, England. There is evidence of teaching as early as 1096, making it the oldest university in the English-speaking world and the world's second-oldest university in continuous operation after the University of Bologna. It grew rapidly from 1167 when Henry II banned English students from attending the University of Paris. After disputes between students and Oxford townsfolk in 1209, some academics fled north-east to Cambridge where they established what became the University of Cambridge. The two 'ancient universities' are frequently jointly called 'Oxbridge'. The history and influence of the University of Oxford has made it one of the most prestigious universities in the world.

Oxford has a distinctive collegiate structure. Students and academics benefit from belonging both to the University, a large, internationally-renowned institution, and to a college or hall, a small, interdisciplinary academic community. There are 39 Oxford colleges (including Parks College, established on 7 May 2019), which are financially independent and self-governing, but relate to the central University in a kind of federal system. There are also six permanent private halls, which are similar to colleges except that they tend to be smaller, and were founded by particular Christian denominations. The colleges and halls are close academic communities, which bring together students and researchers from different disciplines, cultures and countries. This helps to foster the outstanding research achievement that has made Oxford a leader in so many fields. The colleges and the University work together to organise teaching and research, and many staff at Oxford will hold both a college and a University post.



05 | Agenda Description

Cancer Research UK | Oxford Centre

Cancer Research UK (CRUK) is a cancer research and awareness charity in the UK, formed on 4 February 2002 by the merger of The Cancer Research Campaign and the Imperial Cancer Research Fund. Its aim is to reduce the number of deaths from cancer. As the world's largest independent cancer research charity it conducts research into the prevention, diagnosis and treatment of the disease. Research activities are carried out in institutes, universities and hospitals across the UK, both by the charity's own employees and by its grant-funded researchers. It also provides information about cancer and runs campaigns aimed at raising awareness of the disease and influencing public policy. CRUK's work is almost entirely funded by the public. It raises money through donations, legacies, community fundraising, events, retail and corporate partnerships. Over 40,000 people are regular volunteers.

The CRUK Oxford Centre was established in 2010 as a partnership between the University of Oxford, Oxford University Hospitals NHS Trust and Cancer Research UK. The Centre aims to draw on the breadth and depth of fundamental research being undertaken at the University of Oxford and translate it into novel therapeutic strategies which increase cancer cure rates and save and improve people's lives. The Centre currently comprises over 500 members from more than 25 Departments, Units and Institutes of the University, including the Department of Oncology (from where it is managed), as well as from the NHS Trust. Members work across a range of disciplines and collaborate on a local, national and international scale. The Centre supports the translation of novel ideas and hypothesis into early phase clinical trials to speed up translation from scientific discovery to treatments in patients.



CANCER
RESEARCH
UK

OXFORD
CENTRE

OUR RESEARCH
IS CREATING
MORE TOMORROWS





05 | Agenda Description

Oxford University Innovation

Oxford University Innovation Limited (OUI) is a British technology transfer and consultancy company created to manage the research and development of University spin-offs. OUI is a wholly owned subsidiary the University of Oxford. OUI's mission is to be the leading international technology transfer organisation, to transfer technology and expertise from the University of Oxford, to deliver value to all our clients, and to maximise social and economic benefits in a commercial manner. OUI helps staff and students to apply their expertise and research for wider social and economic benefit. Its role is to help University staff and students bring the benefits of their research and expertise to create impact in wider society. OUI support Oxford's researchers, staff and students, offering commercial skills and a range of specialist resources in order to maximise research impact.

Quick facts about Oxford University Innovation

- £17.6m total revenues in 2018 (£18.7m in 2017, £22.2m in 2016 [16-month period], £24.6m in 2015, £14.5m in 2014)
- £8.9m returned to Oxford University and its researchers in 2018 (£8m in 2017, £9.6m in 2016, £13.6m in 2015, £6.7m in 2014)
- 21 spinouts created by us in 2018 (19 in 2017, 21 in 2016, 5 in 2015, 8 in 2014)
- 694 deals in 2018 (685 in 2017, 855 in 2016, 597 total in 2015)
- 3881 patents and patent applications on Oxford inventions managed by us (3425 in 2017)
- £16.1m translational research funding won by Oxford researchers with our direct support (£13m in 2017, £14m in 2016, £25m in 2015, £19m in 2014)





04 | Agenda Description

Francis Crick Institute

The Francis Crick Institute is dedicated to understanding the fundamental biology underlying health and disease. The institute's work is helping to understand why disease develops and to translate discoveries into new ways to prevent, diagnose and treat illnesses such as cancer, heart disease, stroke, infections and neurodegenerative diseases. The Crick was formed in 2015, and in 2016 we moved into our brand new state-of-the-art building in central London which brings together 1500 scientists and support staff working collaboratively across disciplines, making it the biggest biomedical research facility under a single roof in Europe.

The institute is named after the molecular biologist, biophysicist, and neuroscientist Francis Crick, co-discoverer of the structure of DNA, who shared the 1962 Nobel Prize for Physiology and Medicine with James Watson and Maurice Wilkins.

The institute is an independent organisation, which is a partnership between Medical Research Council (MRC), Cancer Research UK, Wellcome, UCL, Imperial College London and King's College London.

Recently, the 2019 Nobel Prize in Physiology or Medicine has been awarded to Peter Ratcliffe, Director of Clinical Research at the Crick and Director of the Target Discovery Institute at Oxford University.





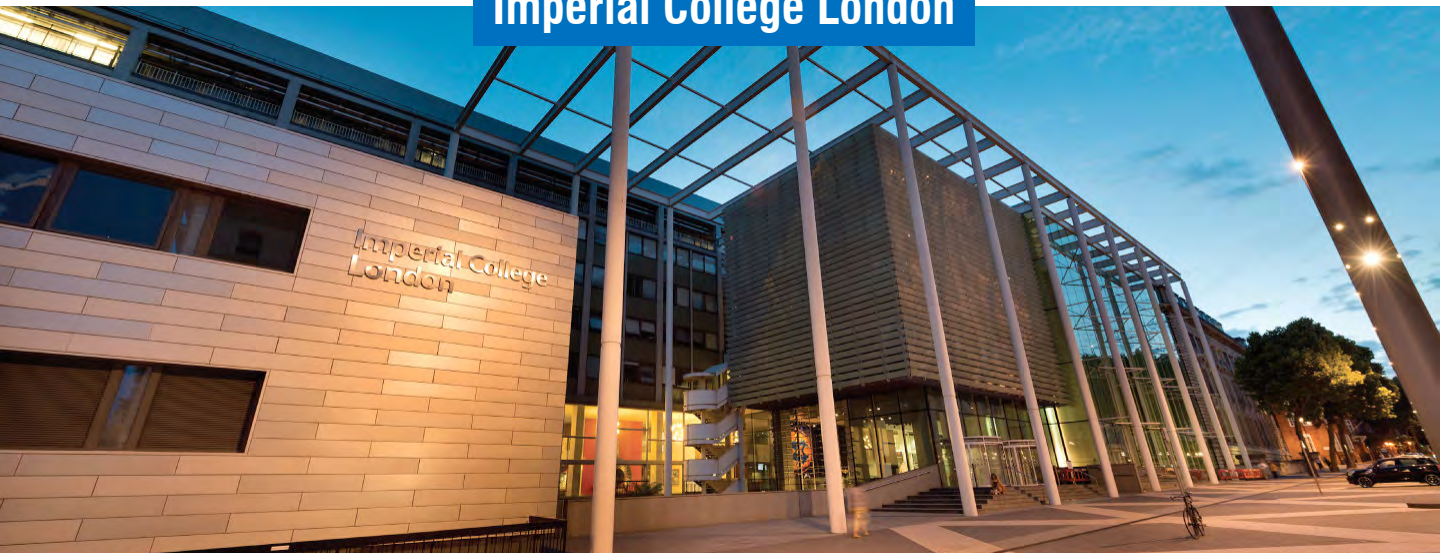
05 | Agenda Description

University of Cambridge



The University of Cambridge, an integral part of the history and character of the city, is divided into 31 colleges where affiliated students and academics live, eat and work. With its origins dating back to 1209, the university Cambridge is the second-oldest university in the English-speaking world and the world's fourth-oldest surviving university. Recognized as one of the best in the world, many of the world's greatest scientist, authors, and political figures are alumni of the university.

Imperial College London



Imperial College London is a world-class university with a mission to benefit society through excellence in science, engineering, medicine and business. Consistently rated in the top 10 universities in the world. Located in the heart of London, Imperial is a multidisciplinary space for education, research, translation and commercialisation, harnessing science and innovation to tackle global challenges. Generations of Imperial, staff, students and alumni have contributed to solving problems on a world scale.



05 | Agenda Description

University College London



Established in 1826 by founders inspired by the radical ideas of Jeremy Bentham, UCL was the first university institution to be established in London, and the first in England to be entirely secular and to admit students regardless of their religion. is London's leading multidisciplinary university currently ranked 10th in the 2019 QS World University Rankings. UCL is a major centre for biomedical research. UCL is part of three of the 20 biomedical research centres established by the NHS in England – the UCLH/UCL Biomedical Research Centre, the NIHR Biomedical Research Centre at Moorfields Eye Hospital NHS Foundation Trust and UCL Institute of Ophthalmology, and the NIHR Great Ormond Street Biomedical Research Centre

OrganOx Limited



OrganOx was founded in 2008 to exploit normothermic preservation technology invented by Prof Peter Friend and colleagues and further developed by Prof Constantin Coussios at the University of Oxford. Since that time, the core technology has been developed into the OrganOx metra, a revolutionary device for storing livers at normal body temperatures for extended periods of time. Following extensive pre-clinical studies and the successful completion of clinical studies, the product is now commercially available within the EU. OrganOx is currently engaged in a further pivotal study in the US and a further study at the Queen Elizabeth Hospital, Birmingham to test the viability and transplant potential of marginal livers.



05 | Agenda Description

Landmarks in London



Buckingham Palace
白金汉宫



St. Paul's Cathedral
圣保罗大教堂



London Tower Bridge
伦敦塔桥



The London Eye
伦敦眼



Big Ben
大本钟



Trafalgar Square
特拉法加尔广场



Science Museum
科学博物馆



Natural History Museum
英国自然历史博物馆



The British Museum
大英博物馆



Victoria & Albert Museum
V&A 博物馆



National gallery
国家美术馆



Bank of England
英格兰央行



06 | Programme Fees

Description	Items
<p>Tuition Fee (¥ 37,500)</p>	<p>Tuition fee includes:</p> <ul style="list-style-type: none"> - All courses fees - Course and lecture materials - Insurance fee - Accommodation - Breakfast, Lunch for workshop days, Farewell dinner - Leisure activities, scheduled cultural excursions, and social activities - Airport pick up & drop off service - Shuttle service in UK
	<p>Tuition fee excludes:</p> <ul style="list-style-type: none"> - Domestic or international travel to or from London at the start and end of the programme - Any associated costs e.g. visa application costs - Lunch (except lunch for the workshop days) and dinner costs - Laundry and other personal spending

Remember to look at the stars and not down at your feet.

—— Stephen Hawking