



# LECTURER OF IMMUNOLOGY



AT THE UNIVERSITY OF SURREY



RECRUITMENT INFORMATION PACK





# BUILDING

▶▶▶ **BRILLIANCE** ◀◀◀

**AT SURREY, EVERY STEP COUNTS,  
EVERY LITTLE DISCOVERY.**

The Faculty of Health and Medical Sciences has research partners in over 40 different countries worldwide. The Faculty offers an extensive portfolio of teaching programmes with considerable league table success for undergraduate, postgraduate, research and continuing professional development courses. Ranked 1st for Food Science, 1st for Veterinary Medicine, 5th for Psychology and 7th for Biosciences in the UK, the Faculty offers courses that are academically rigorous and practically relevant.

The Faculty is ranked top ten for research in the UK. (REF 2014), 93 per cent of our biosciences, health, psychology and veterinary research was rated world-leading or internationally excellent, placing Surrey eighth out of 94 institutions in the Allied Health category.



# ENTER

## A WORLD OF COLLABORATION

SURREY IS MADE UP OF MANY TALENTED INDIVIDUALS WHO MAKE US A GREAT INSTITUTION. AND WORKING TOGETHER, AND CONNECTING WITH EXTERNAL INSTITUTIONS, BUSINESSES AND GOVERNMENT MAKE US EVEN STRONGER.

Since the University's founding in the 1960s, and before that at Battersea College, our community has thrived on strong connections with the world outside our campus. This spirit of collaboration is evident across the University today at every level. It informs our teaching, adds value to our research and increases our impact – connecting people with ideas, students with opportunities and businesses with technology.

Collaboration begins with the connections we make in our community, supporting projects that make a difference locally, and extends to our global partnerships that are enabling transformative research in areas such as 5G, AI, cancer treatment and sustainable tourism.

Around the globe and beyond, Surrey plays a significant role. We were one of only a few UK universities invited to take part in the GREAT Festival of Innovation in Hong Kong, a wonderful forum for collaboration and interdisciplinary discussion on

technologies that will drive the UK's future economic growth. We also saw the first successful deployment of the RemoveDEBRIS satellite, a project we are leading with a consortium of space sector organisations.

There's real energy, momentum and ambition to Surrey. It's always been part of us, and I'm excited to be able to share with you how we're taking that energy forwards into the future.

These collaborations, and many others, are bringing improvements across a diverse range of fields, and new connections are propelling us in surprising directions. At Surrey, we are continuously redefining and joining together the many spheres that surround us – from real worlds to virtual ones, and from the worlds inside ourselves to those at the farthest reaches of our imagination.

**Professor G Q Max Lu** AO DL FAA FTSE  
President and Vice-Chancellor  
University of Surrey

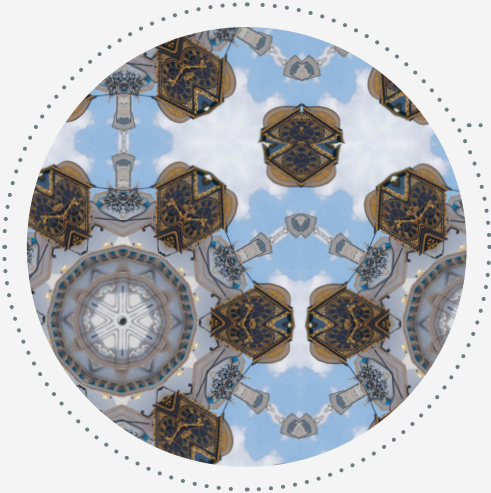
OUR WORLDS OF

# COLLABORATION

SURREY IS AN INTERCONNECTED NETWORK OF INTELLIGENCE, INNOVATION AND DISCOVERY – AND THE EFFECTS OF THE CONNECTIONS WE MAKE WITH THE OUTSIDE WORLD CAN BE FELT LOCALLY, INTERNATIONALLY AND IN WORLDS BEYOND OUR OWN. OUR EXTENSIVE, WELL-ESTABLISHED COLLABORATIONS WITH INDUSTRY AND THE NATIONAL HEALTH SERVICE (NHS) CONTINUE TO PROVIDE KNOWLEDGE EXCHANGE WITH THE COMMERCIAL SECTOR, CLINICAL PRACTICE AND THE WIDER COMMUNITY.

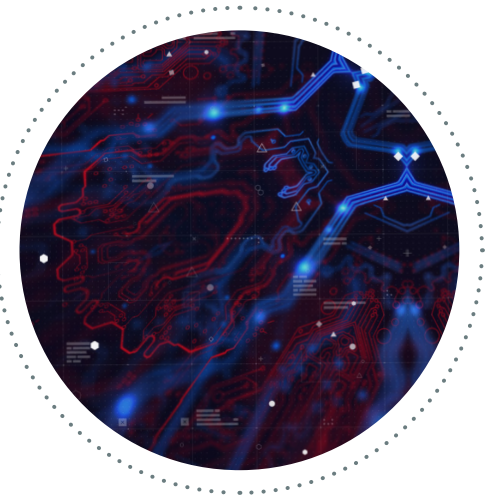
## LOCAL

It starts with the active role we play in the community on our doorstep and our local networks. We have many collaborations with partner organisations including the Pirbright Institute, APHA, the Laboratory of the Government Chemist, the Quadram Institute, the Royal Surrey County Partnership Trust, Surrey and Sussex Health Partnership Trust.

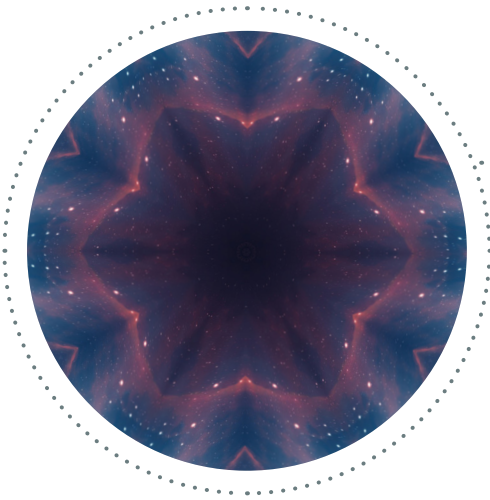


## INTERNATIONAL

We see opportunities rather than boundaries, making connections across the world in our quest for new discoveries.







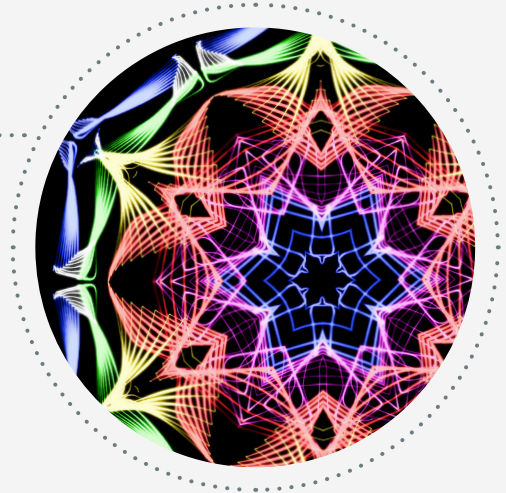
## INNOVATION IN HEALTHCARE

The University plays a leading role in the Kent, Surrey and Sussex Academic Health Sciences Network forging greater collaboration between academic institutions, the NHS and industry to boost research and innovation in health care.



## OTHER WORLDS

The next generation of communications technology and data analytics, namely 5G, puts Surrey at the forefront of the connected health agenda. Our expertise, resource and infrastructure enable us to harness talent in the physiological and big data sciences to enable the development and evaluation of new e-health devices.



## THE FUTURE

Our curious mindset and spirit of innovation means we always stay focused on what's to come.





# ▶▶▶ OUR VISION ◀◀◀

## FOR FHMS RESEARCH

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is to be internationally recognised for delivering high quality research, innovation and impact, resulting in sustainable benefit for the health and wellbeing of humans and animals and the global environment. We are internationally known as a partner of choice and exemplary for developing postgraduate and early career researchers. Our mission is to improve the health and wellbeing of humans and animals and their environments through new knowledge and its application to the design, development and delivery of responsible innovation and impact.

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We are growing our reputation as the place for the next generation of researchers and innovators to develop the confidence and skills they need to launch their careers. To echo the University's Strategy, we will not only support our researchers for today but also prepare them for success tomorrow. Key doctoral training partnerships include the Leverhulme Quantum Biology Doctoral Training Centre; the FoodBioSystems Doctoral Training Partnership and the Applied Research Collaboration Kent, Surrey and Sussex.

Our research is driven by an understanding of the importance of collaboration and co-creation with colleagues and with those individuals, groups and organisations beyond our Faculty and University who have an interest in our work, and with those who have an interest in their work. We use these interactions to shape what research we do, as well as how it is conducted, disseminated and used; through such knowledge exchange and stakeholder involvement

we will foster innovation for the widest possible benefit. It is the varied disciplinary knowledge, networks, life experiences and skills of our research and innovation community that will enable us to achieve our mission.

Our research focus falls principally under the University theme tackling the Global Grand Challenge of Lifelong Health. This focus is underpinned by pillars of research excellence in:

- Chronobiology and Sleep
- Infection and Immunity
- Nutrition and Food Security
- Healthy ageing and supporting long term conditions
- Understanding Relationships with Social and Physical Environments
- Digital Health and Data Science





## INTRODUCING

# FHMS

THE FACULTY OF HEALTH AND MEDICAL SCIENCES (FHMS) IS ONE OF THE UNIVERSITY OF SURREY'S THREE FACULTIES. FHMS IS HOME TO FOUR SCHOOLS WITH WORLD-LEADING FACILITIES FOR RESEARCH IN THE SCHOOLS OF BIOSCIENCES AND MEDICINE, THE SCHOOL OF HEALTH SCIENCES, THE SCHOOL OF PSYCHOLOGY AND THE SCHOOL OF VETERINARY MEDICINE.

### THE SCHOOL OF BIOSCIENCES AND MEDICINE:

aims to optimise human and animal health for the benefit of society, in the face of global challenges such as ageing populations, disease burden, food security and climate change. Our expertise is focused in terms of critical mass of world leading experts working in four broad areas: biochemical sciences, microbial sciences, nutritional sciences and clinical and experimental medicine. Our research capability is supported by superb facilities and a centrally-funded skilled technical team. It extends from molecular analyses at the bench, through in vitro small animal studies, first in human clinical trials and 'second translation' research in the community.

In chronobiology and sleep research we exploit fabulous molecular biology and in vivo facilities to study circadian rhythmicity, including the effects of light and sleep and this work is complemented beautifully by work on humans thanks to our state-of-the-art residential clinical facilities.

Basic and clinical translational research in the School is also undertaken in clinical medicine, cardiovascular science, immunology, oncology and multi-omics, the latter having considerable big data analytical capability. This research is further enabled by our accredited clinical trials unit and clinical research facility, the latter with first in human capability. Complementing these are our Surrey Health Economics Centre (SHEC) and we host the NIHR-funded South East Research Design Service.

Our bacteriologists cover a broad spectrum of pathogens and represent the largest grouping of investigators in Tuberculosis research in the UK.

Our virology research emphasises virus exploitation and interaction with cellular processes including translation, protein processing and innate immune responses. These infection biology studies are enabled by in-house containment level 3 facilities and complemented by systems biology research expertise.

In nutritional sciences, our research benefits from the clinical facilities described above and includes molecular nutrition and micronutrients, metabolic medicine and macronutrients and sports and exercises sciences.





# Therapeutics ONCOLOGY

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I'm getting a lot of experience in the clinical trials industry. It's a very complicated process and it has been a real eye-opener to discover how much needs to be done to get a trial running. I'm very excited to learn more.

”

Kayleigh Cheong

Ultimately, our multidisciplinary and translational applied teaching and research are tackling current and emerging global health challenges to improve human and animal health and wellbeing.

1,038

STUDENTS ON  
PLACEMENT ACROSS  
THE GLOBE IN 2017-18

2,300+

PLACEMENT PROVIDERS  
IN THE UK AND  
OVERSEAS





A KINGDOM OF

# ▶▶ COLLABORATION ◀◀

WITH OUR NETWORK OF VETERINARY PRACTICES ACROSS THE UK,  
WE'RE CREATING A NEW GENERATION OF VETS.

The **School of Veterinary Medicine** has created a vet school that is different.

Just over five years ago we welcomed a very special group of students – our first cohort of undergraduate students to our School of Veterinary Medicine - who successfully graduated in July 2019. The School houses lecture theatres, biomechanics laboratories, a Veterinary Clinical Skills Centre and one of Europe's largest and most sophisticated high containment veterinary pathology centres. Whilst embracing the traditional values of professionalism, scientific curiosity and clinical excellence, it has broad horizons.

With a strong One Health focus, our expertise in veterinary pathology & digital pathology, microbiology, parasitology, immunology, antimicrobial resistance, endocrinology, metagenomics & microbiome, nutrition, neurobiology, oncology & neurology, and physiology is complemented by epidemiology and the appropriate use of innovative technology through vHive. The Veterinary Health Innovation Engine (vHive) is a unique partnership between the University of Surrey and Zoetis Centre for Digital Innovation, supported by a co-investment of £8.5 million in resources dedicated to the development and adoption of new digital technologies in animal health. Veterinary researchers are also involved in the development of novel

alternatives to antibiotics (zoonotic diseases), vaccine development and improved practices through food production and management of biosecurity on farms. Close links with our veterinary partners, Pirbright and the Royal Surrey County hospital facilitate research projects to understand the pathogenesis of diabetes, neoplastic disease and neurological diseases in animals and humans.

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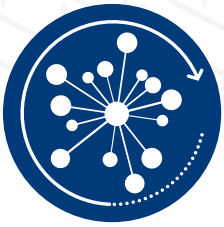
**Our fully distributed model of education – working with practices to provide clinical training - is the first of its kind in the UK.**

**Our partners are critical to the delivery of this novel model and ensure our students develop the knowledge, skills and attributes required for life as veterinary graduates.**

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**Dr Mike Cathcart**  
Director of Clinical Education  
at the School of Veterinary Medicine





# FHMS

## CORE FACILITIES

OUR RESEARCH CAPABILITIES ARE ENABLED AND ENHANCED BY FOCUSED, WELL-RESOURCED FACILITIES THAT ARE SUPPORTED BY A CENTRALLY-FUNDED RESEARCH TECHNICAL TEAM OF 60 TECHNICIANS.

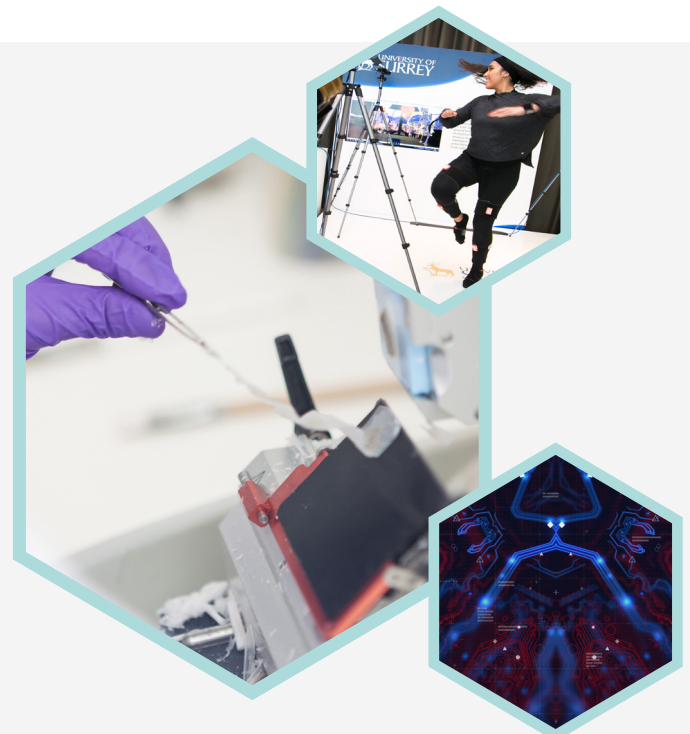
The clinical research facility (CRF) is a core human research resource which is Medicines and Healthcare products Regulatory Agency (MHRA) accredited for first in human Phase I studies.

Our Clinical Trials Unit (CTU) is UK Clinical Research Collaboration (UKCRC) accredited and covers all aspects of trial design, set-up, trial conduct, data management, data analysis and reporting from single-site to global multi-centre trials.

The Surrey Sleep Research Centre (SSRC) is home to forward-thinking multidisciplinary approaches to sleep research and offers a wide range of state-of-the-art equipment to monitor, record and analyse sleep patterns and sleep disorders. Facilities include individual sleep laboratory bedrooms and a hospital ward environment with infrared CCTV monitoring.

Our Digital Health Technology Accelerator is part of a multi-partner enterprise to enable innovation and implementation of digital devices and ways of working to improve patient care and enable individuals to live in their homes independently and for longer as they age.

Building on our existing reputation in biosciences, the University invested £7.5m in 2018 to build a biomedical research facility in which to conduct animal studies for research in areas such as cancer, sleep, circadian rhythm, ageing and infectious disease. The facility comprises a holding space for small animals (mice, rats, guinea pigs, rabbits and hamsters), along with dedicated procedural space for work at Biosafety Containment Level 2 as well as surgical, sleep and circadian rhythm suites.



Infection research is enabled by two separate containment level 3 suites on site. Bioinformatics capability is provided by an academic-led facility with dedicated research officers providing advice in experimental design and costing for research proposals, and a range of skills in data sourcing, wrangling, processing, and analysis. Aside from standard laboratory facilities, our dedicated, technician-supported research facilities include:

automated quantitative pathology imaging; automated immunohistochemistry; confocal microscopy, including live cell; mass spectrometry; bioreactors; Illumina MiniSeq; flow cytometry, including cell sorting in containment level 2; Microencapsulator facilitating innovative single cell RNAseq; animal gait analysis; human movement analysis including gait.



THE PIRBRIGHT INSTITUTE IS A WORLD LEADING CENTRE OF EXCELLENCE FOR RESEARCH AND SURVEILLANCE OF VIRAL DISEASES OF LIVESTOCK AND THOSE THAT SPREAD FROM ANIMALS TO HUMANS.

The cutting-edge research undertaken at The Pirbright Institute is made possible by a range of highly specialised expertise coupled with unique facilities, both in high and low containment environments. This creates a national capability that is unique within the UK and is utilised by organisations worldwide.

The BBSRC National Virology Centre (Plowright Building) is a state-of-the-art high containment laboratory (containment level 4). It provides a single containment envelope, enabling CL3, SAPO3 and SAPO4 science to be undertaken within a single facility. The laboratory uses world-leading bio-containment technologies to enable scientists to study viral diseases of livestock, including zoonoses. This ensures that the UK has the infrastructure to better enable the fight against viral diseases that threaten agriculture and animal health, and which could pose a threat to humans.

The BBSRC National Vaccinology Centre (Jenner Building) supports research activities which do not require a high level of containment, helping to extend the range of viruses studied at Pirbright and accommodating specific disciplines (e.g. immunology, host genetics and genomics) in close proximity to both high and low containment experimental facilities.

Many of these diseases studied at Pirbright have enormous economic and social impacts as well as animal welfare implications. To that end Pirbright has extensive facilities for performing studies with the primary host animals (livestock and chickens) and the natural disease agents. Pirbright's facilities and associated scientific and operational expertise in in vivo viral disease experimentation is not replicated elsewhere in the UK.

Many of the viruses studied at The Pirbright Institute are spread between livestock, humans

and wildlife by insects or ticks. We manage and maintain insect colonies in our insectary and provide scientific expertise to help understand the transmission and ecology of the viruses that they spread. The Insectary is in close proximity to the National Virology Centre which houses an arthropod infection suite, whereby insect vectors can be infected with specific pathogens of interest. These insects can be studied in and out of high containment to improve our understanding of the relationship between virus, vector and host.

Pirbright is equipped with a number of other facilities and collections which accelerate research. This includes FACS and cell sorting, high-throughput sequencing and state of the art bio-imaging facilities within containment. Pirbright also maintains genetically defined pig and cattle herds and accesses inbred chicken lines through the National Avian Research Facility.





# IN OUR COMMUNITY

WE ARE PROUD TO PLAY A PART IN THE RICH LIFE OF GUILDFORD AND OUR SURROUNDING AREA, AND WORK HARD TO DEVELOP MEANINGFUL AND MUTUALLY BENEFICIAL CONNECTIONS WITH OUR LOCAL COMMUNITY.

We have partnered with local organisations on an inspiring range of projects to celebrate what's great about Guildford, support residents and be a good neighbour in our community, building and developing close relationships.

Responding to our annual Guildford Residents' Survey we worked with students to promote safety and reduce noise, introducing Night Street Marshalls, the #LetGuildfordSleep campaign and providing a regular night bus service.

We hosted the Pint of Science festival in Guildford pubs and supported STEM through the Innovate Guildford Festival, as well as launching several volunteering and research projects that will benefit local residents. As part of our wider support for our neighbours in the North West Guildford community, our ongoing work with Kings College has helped secure a 'Good' OFSTED rating for the school. We also successfully delivered a brand-new community garden, which itself won an award at Guildford in Bloom, an event proudly sponsored by the University.

In these challenging times, we recognise the importance of supporting local vulnerable people and this year hosted a special reception for Transform Housing and Support, a charity which aims to provide housing, support and homecare for 2,000 homeless and vulnerable people each year.

The University continued to support and promote Guildford's rich culture and was delighted to see members of the public performing alongside students in our University of Surrey Community Orchestra.

We celebrated the people and places which make Guildford and Surrey such a special place to live, work and study. To mark 60 years since the Surrey Hills was

named an Area of Outstanding Beauty, we enjoyed hosting a symposium to commemorate this event and celebrate the landscape that forms part of the unique character.

In 2019, our MSc Criminology students worked with people through education, taking on an eight-week 'Learning Together' project with prisoners at Send Prison.

Our community is part of the fabric of life at Surrey, and the connections we forge with residents, charities and institutions bring mutual benefits in new and unexpected ways. By inviting the outside world in, and reaching out, we will continue to learn and grow together.







**UNIVERSITY OF SURREY**  
Guildford, Surrey GU2 7XH, UK

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