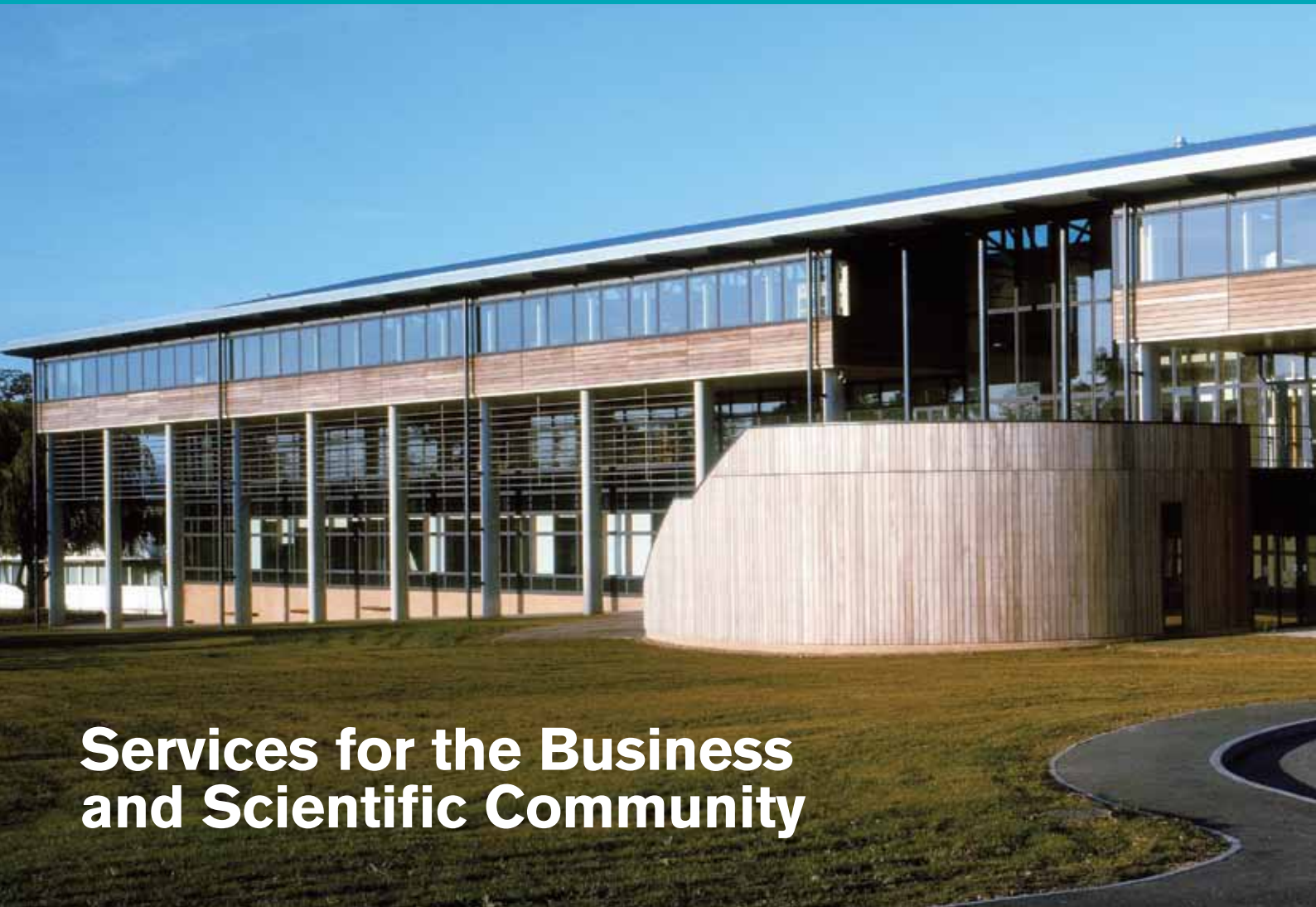


RVC

**Royal
Veterinary
College**

University of London



**Services for the Business
and Scientific Community**

From Green Pastures to Blue Sky Thinking

The Royal Veterinary College is internationally recognised as a leading teaching and veterinary research centre and is the UK's largest, longest-standing and only independent specialist veterinary institution. RVC offers an exceptional environment for developing talent across a broad range of specialist areas.

This brochure outlines the range of services available to the business and scientific community and opportunities for collaboration with staff working at the leading edge of biomedical and veterinary science.

It outlines services offered by our Contract Research Unit, Clinical Investigations Centre and Named Veterinary Surgeon service, as well as individual training opportunities for those working in industry, government or academia.

It also gives an overview of the College's research expertise and opportunities for collaboration.

Why Choose the Royal Veterinary College?

- RVC clients benefit from a range of services and expertise, from routine animal husbandry or laboratory services, to full study design and management
- We tailor our offering according to individual requirements and provide clients with efficient and high quality animal facilities, cared for and run by the College's expert technical staff
- We understand the importance of timely and efficient communication and reporting at all stages of the process
- High standards of service are underpinned by our reputation for animal welfare and academic expertise in models of animal disease







Contract Research Unit

From routine animal husbandry and laboratory services to full study and design management

The College's Contract Research Unit provides a quality service to biotechnology and pharmaceutical companies, within the UK and overseas.

Our Experienced Staff:

- Provide excellent standards of research, carried out in a scientifically active environment - we offer much more than a Contract Research Organisation
- Understand the scientific principles behind the research
- Work alongside the RVC research community. This enables access to superior expertise and facilities, to allow any request to be tailored to our client's needs

Expert Report Writing

We are able to source scientific expertise and have access to experts with experience of assessment of applications for marketing authorisations, through membership of Government Advisory Committees.

Project Management Expertise

We deliver a professional, efficient service and offer a range of packages to suit the client's needs. A dedicated Study Director acts as a single point of contact to ensure efficient service delivery and management.

- Expertise in study management including:
 - Study monitoring (UK and abroad)
 - Study design
 - Protocol writing
 - Standard Operating Procedure (SOP) provision
 - Data management and data capture system design
 - Statistical analysis
 - Report writing
 - Management of multi-site studies
- "Meeting your needs"
 - Regular project updates
 - Scheduling to meet sponsor timelines
 - Dedicated single point of contact



Study Types

- We support all stages of pre-clinical and clinical product development within the regulatory and non-regulatory environment, complying with regulations as appropriate.

Examples of studies include:

- Target species safety studies
- Short and long term efficacy studies
- Infectious disease studies
- PK-PD modelling
- Residue studies
- Medical device testing
- Antibody production

Animal Facilities

- RVC is committed to improving standards of animal welfare, through programmes of education and research. We maintain our reputation for high standards of animal husbandry and experienced technical support.
- Wide range of animal accommodation available for individual or group housing of laboratory, companion and food animals
- Multifunctional farm animal accommodation
- Category 2 disease containment facilities
- Flexible film isolators
- Gnotobiotic stock maintained
- Quarantine accommodation
- Individual ventilated cages

- Specified pathogen free animals sourced from approved suppliers
- Study-specific veterinary services
- Modern surgical facilities with state-of-the-art equipment and experienced personnel
- Dedicated necropsy suites

Quarantine and Gnotobiotic Services

- Quarantine, screening and advice for animals in our dedicated isolator suite
- Re-derivation by embryo transfer or caesarean section
- Animals housed in separate flexible film isolators
- Category 3 containment studies
- Facilities to maintain axenic (germ-free) animals
- Studies possible in monoxenic and dixenic animals

Support Services

- Close links with the RVC Ethics Committee and Home Office under Animals (Scientific Procedures) Act 1986
- Secure archiving and sample storage facilities

Quality

Quality is more than a tool for regulation; it underpins our approach to business. Our Quality Assurance (QA) unit reports directly to RVC management.

Quality Features:

- Dedicated areas certified as GLP compliant by UK GLPMA
- GCP (V)
- Dedicated independent QA personnel
- BARQA membership
- GRP (Good Research Practice) in-house quality system
- QA management of GLP multi-site studies

Contact Us

For further information, or to request a quote, please contact: cru@rvc.ac.uk

T: +44 (0) 1707 666 241





RVC Clinical Investigation Centre (CIC)

The College's Clinical Investigation Centre (CIC) provides a service for animal and human health companies seeking to:

- Carry out veterinary clinical trials
- Explore opportunities to extend a drug's use for the animal health market
- Test new therapeutic initiatives in dogs and cats with naturally occurring disease as comparative models of human disease, to the benefit of both species
- Carry out laboratory studies on molecules of therapeutic interest

Academic and Clinical Expertise

RVC clinicians and academics work in state-of-the-art facilities to carry out clinical research in naturally-occurring diseases in companion animals. Strong links with the veterinary profession and animal owners ensures access to a broad and diverse case load.

CIC is based at the College's Queen Mother Hospital for Animals (QMHA), one of Europe's largest specialist veterinary referral centres, within easy reach of Central London and the South-East.

The Centre is staffed by a Veterinary Director and a team of specialist clinical investigation nurses (all with GCP training), a laboratory manager/supervising scientist and

laboratory technicians. Staff work alongside academics in the design and implementation of projects and in supporting clinical research activities. Academic clinicians and basic scientists carry out controlled and strictly regulated clinical investigations, collaborating internationally with other leading academic institutions in the animal and human health arena.

Research interests cover the full range of small animal clinical activities including oncology, endocrinology, gastroenterology, nephrology, orthopaedics and critical care. Excellent facilities at the QMHA means advanced surgical techniques such as cardiopulmonary bypass can be performed; surgeons liaise with the College's Structure and Motion Unit for gait analysis and benefit from the diagnostic imaging capability of the MRI and CT Units.

CIC Laboratory Facilities

Our purpose-built laboratories comply with Good Research Practice (GRP) - an in-house quality system based on the Joint Code of Practice developed to promote the quality and validity of scientific data that is applied to all research practices within the RVC.

The Laboratories are operated as a highly supervised unit. Commercial laboratory studies are in vitro in nature

and/or involve archived material and are conducted by technical staff under the direction of the CIC supervising scientist and an appropriate RVC clinician.

The laboratories and the techniques performed include:

(i) Sampling Lab

(ii) General Molecular and Immunohistochemistry Lab

- a. PCR and Post-PCR techniques
- b. Immunohistochemistry, immunocytochemistry, and ELISA
- c. SDS-PAGE/western blotting

(iii) Clean Molecular Lab

- a. Nucleic acid extraction
- b. cDNA synthesis
- c. Preparation of PCR cocktails

(iv) Tissue Culture Lab

- a. Development and maintenance of tumour cell lines
- b. In vitro studies - pathobiology, response to novel molecules, immunotherapeutics, and investigating new biomarkers.

(v) Multipurpose Lab

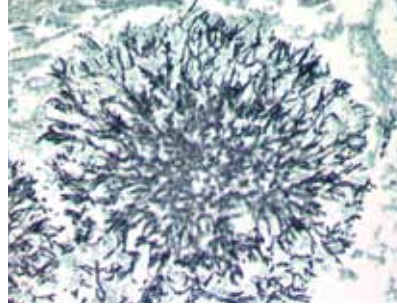
- Protein and nucleic acid quantification
- Nucleic acid extraction and preparation of PCR cocktails (students only)

Contact Us

To arrange a meeting to discuss how the Clinical Investigation Centre might benefit your organisation, contact the Veterinary Director:

T: +44 (0) 1707 666 605

E: cic@rvc.ac.uk



RVC Diagnostic Laboratory Services

Diagnostic Laboratory Services are delivered by professionally qualified specialists.

Clients benefit from expertise available within a leading veterinary research organisation; many innovative tests are simply not available elsewhere.

Our Services

- Haematology
- Clinical chemistry
- Cytology
- Histology and histopathology
- Immunohistochemistry
- PCR
- Microbiology
- Parasitology
- Endocrinology
- Serology
- Post mortem examination

Expert Pathology and Technical Support

- Our highly qualified anatomical and clinical pathologists are members of the American College of Veterinary Pathologists, the European Colleges

of Veterinary Pathology and Veterinary Clinical Pathology and the Royal College of Pathologists

- Our dedicated and highly skilled technical team are experienced in overseeing in-house tests as well as advising on referral tests
- Activities are co-ordinated through a Laboratory Integrated Management System (LIMS) from receipt of samples, reporting of results to accessing historical data
- High standards of laboratory work are maintained, with regular internal and external quality control

Specialist Services

- Toxicological pathology
- Dermatopathology
- Exotic species
- Infectious disease pathology and pathogenesis
- Muscle biopsies and related assays
- Neuropathology

Laboratory Animal Diagnostic Service (LADS)

- Provides advice to the research community on all aspects of laboratory rodent health
- Supports clients establishing health monitoring programs, to keep their animals free from infective agents and in order to ensure their general well-being

Full Service Offering

- Provision of skilled personnel, experienced in working with rodents, to perform aspects of screening that clients are unable to perform themselves
- Clients are provided with a detailed picture of the disease-status of their rodent colony, enabling them to deal more effectively with movement, reception and transport of animals of uncertain health status; an integral feature of modern research
- Standard screening profiles are designed to comply with the European standard as agreed by all the main animal laboratories. Screening profiles can be tailored to accommodate client requirements
- On-site service is available at the client's premises on request

Contact Us

For further enquiries, visit our website or contact the Diagnostic Services Secretary.

T: +44 (0) 1707 666 208

F: +44 (0) 1707 661 464

E: diagnostic@rvc.ac.uk

W: www.rvc.ac.uk/hospitals/DLS



Study Design and Data Analysis

The College's Veterinary Epidemiology and Public Health group has extensive experience of working with clients to assist in study design and analysis of complex data, collected as part of specific trials, field studies or surveillance activities.

A key strength is our ability to combine an understanding of biological relationships with appropriate quantitative analysis methods, in order to maximise scientific knowledge.

We can advise clients on the quantitative aspects of scientific study design, to address particular research questions and with the objective of minimising possible biases and attaining acceptable levels of statistical power.

Our expert staff are experienced in the statistical and epidemiological analysis of data from observational and experimental studies. This is supported by specific methodological strengths and experience in the application of probabilistic risk assessment, spatial analysis and social network analysis to research questions of disease control policy relevance.

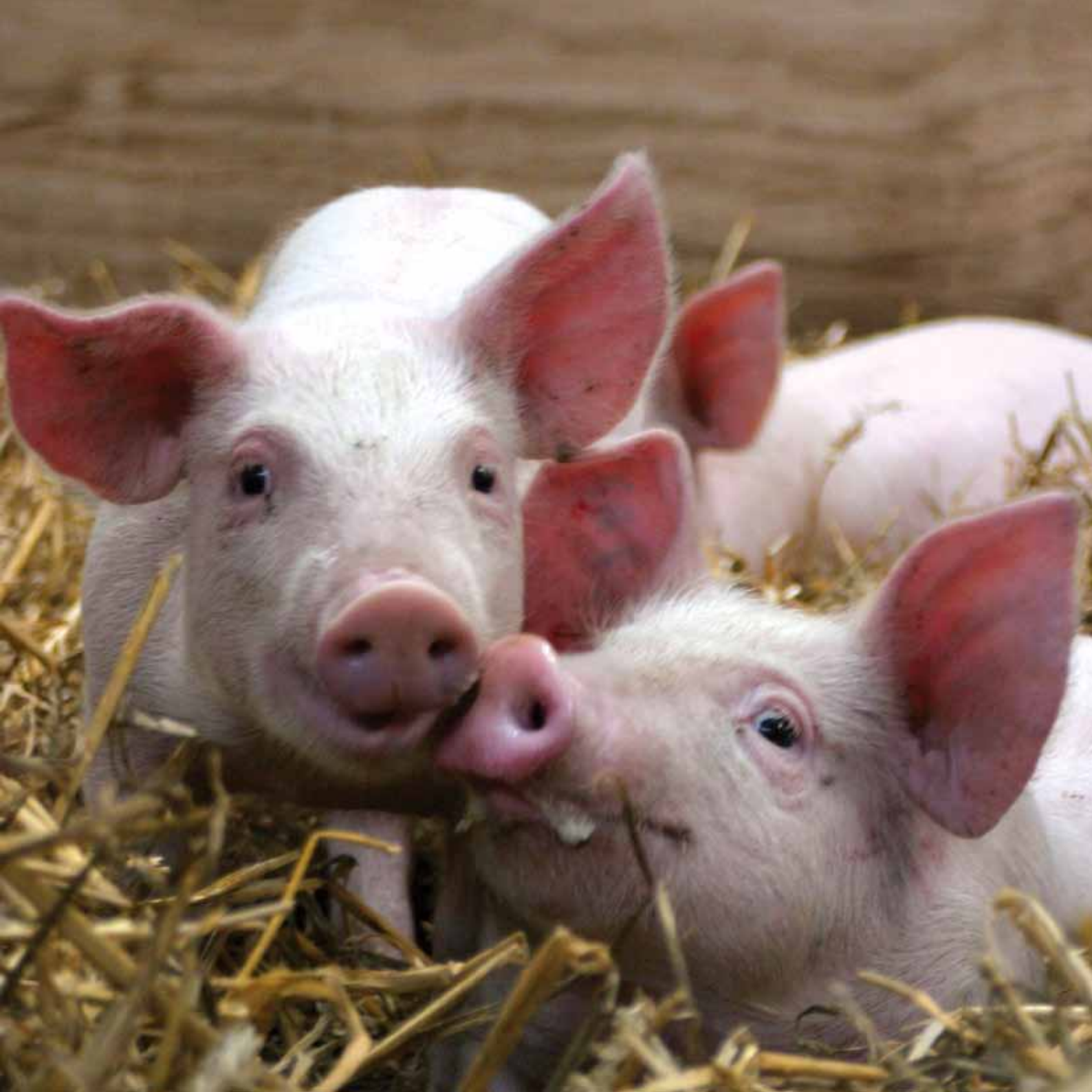
In recent years, these skills have been applied to a range of topics such as epidemics of highly pathogenic avian influenza in Asia and Foot and Mouth Disease in the UK, and surveillance of scrapie and farm-level bio security.

Consultancy research contracts involve work with national agencies such as VLA, charities such as Dogs Trust, European organisations such as EFSA and international agencies such as FAO, ILRI and IFPRI.

Contact Us

For further information:

E: dpfeiffer@rvc.ac.uk





Home Office Licensee Training and Advanced Courses, Delivered by the Royal Veterinary College

RVC is accredited by the Society of Biology, to provide recognised training courses for individuals seeking to apply to the Home Office for either Personal or Project Licences under the Animals (Scientific Procedures) Act 1986. Courses are organised into modules, according to the type of Licence required, with students participating in interactive lectures, practical handling and workshops.

General modules may be of interest to staff, who may not work with animals, but who would benefit from knowledge about the A(SP)A, such as administrators or Ethical Review committee lay persons.

Our expert tutors provide courses for a variety of species, including:

- Rodents & rabbits
- Farm animals (cattle, pigs, sheep, goats)
- Deer
- Minipigs
- Carnivores (dogs, cats, ferrets)
- Horses

Module format: For intending Personal Licensees;

- **Module 1:** ethical background to the Act, detail of the Act's requirements and other related legislation
- **Modules 2&3:** general biology and care of research animals, health and safety, introduction to anaesthesia
- **Module 4:** Surgical and anaesthetic techniques

For intending Project Licence holders:

- **Module 5:** preparation and management of the Project licence, statistics and experimental design

Course fees are competitive and include:

- Online access to course resources; handouts and information booklet
- Refreshments (tea, coffee and healthy snacks at morning & afternoon breaks)
- Society of Biology Certificate - required to apply for a Home Office Personal or Project Licence

Advanced Training and Support

Half-day courses and bespoke workshops can be held either at the RVC, or at the client's facility, by arrangement. These are suitable for both Licensees and Animal Care Staff, building on knowledge gained during the Modular courses.

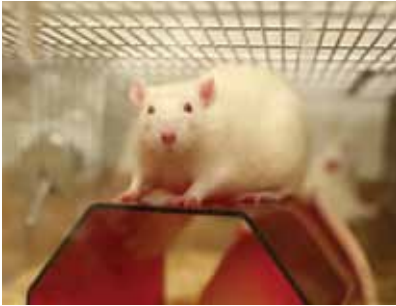
Topics include:

- Aseptic surgical technique
- Advanced anaesthesia and analgesia
- Ethics in animal research
- Legislation Refresher Course

Special surgical workshops (run using cadaver animals at RVC):

- Intubation for anaesthesia in the mouse, rat and guinea pig
- Cannulation of vessels within the mouse
- Suturing, materials and techniques
- Ovariectomy and orchectomy





RVC Named Veterinary Surgeon Services

UK law requires that all organisations which keep animals for use in research must nominate a vet to advise them about the health and welfare of those animals.

RVC has assisted organisations in the London area by providing them with a Named Veterinary Surgeon (NVS) since the inception of the Animals (Scientific Procedures) Act in 1986. Our clients include a variety of academic, pharmaceutical, contract research and commercial organisations. Our service has now expanded to include the Cambridge area too.

A Team Of Qualified Vets

Our team of vets work full-time as dedicated NVSs, enabling us to provide a knowledgeable, high-quality service for our clients.

Our commitment to excellence ensures that our vets keep up-to-date with advances in animal care, refinements in methods and relevant legislation through continuous postgraduate education. Members of our team hold the Royal College of Veterinary Surgeons' Certificate and Diploma in Laboratory Animal Science.

Flexible Delivery

Our work can be tailored to the size and type of your organisation. In cases where you do not require a full-time NVS, we are happy to discuss and tailor our services to your own requirements.

Recognising the need for consistency, we aim to ensure that one vet covers a particular unit (or group of units), although we will ensure that you have veterinary cover over holiday or sickness periods too.

Our service is comprehensive, covering clinical and routine visits, Ethical Review meetings, training, and advice regarding Project and Personal Licence applications.

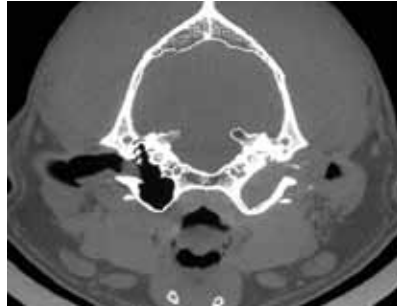
Expert Advice And Guidance

Our experience enables us to advise on suitable animal models, anaesthetic, surgical and technical methods, use of medicines, husbandry and particular species requirements, from small rodents and amphibians to farm animals. We are available for advice on routine matters, visits or emergency consultations all day, every day.

Should your staff require formal training, our veterinary service is complemented by our training programmes for Licensees, both new and experienced.

Contact Us

For further information on Home Office Licensee Training and our Named Veterinary Surgeon Service,
E: hocourses@rvc.ac.uk



RVC Research Expertise

RVC is highly respected for quality research across both biomedical and veterinary science and engages staff of international standing.

Our research programmes address both basic and clinical problems in the biosciences, with applications in veterinary and human medicine. Research programmes span cell and molecular science, whole animal physiology and population medicine.

A London Advantage

Our research benefits from close proximity to other international centres of excellence in biomedical and biological sciences, which allows us to take advantage of expertise in functional genomics, proteomics, metabolomics and bioinformatics.

In London, particularly close collaborations exist with the Institute of Orthopaedics and Musculo-Skeletal Science (part of University College London), and the London School of Hygiene and Tropical Medicine. RVC also works closely with the Animal Health Trust (Newmarket), the Institute for Animal Health and the Veterinary Laboratories Agency. The College has over 100 research-active staff who, together with their postgraduate students (PhD and Clinical Training

Scholars), are organised into two broad programmes, covering different aspects of research:

- Infection and Immunity
- Lifestyle

The College also has a strong epidemiology team with complementary research interests, led by Professor Dirk Pfeiffer, which is represented in each of the research groups and facilitates interactions between basic and clinical scientists. In addition, animal pathology and genetics and animal welfare are strong scientific disciplines underpinning each of our research themes.

A Commitment to Animal Welfare

Animal welfare lies at the heart of much of our research and Professor Christopher Wathes leads a team of scientists with a strong track record in this area, supported by a state-of-the-art controlled environment facility which enables study of the impact of environmental influences on animal welfare.

Recognising Commercial Potential

Commercialisation of the results of our research is critical. The College's Business Development team, RVC Enterprise, works closely with the Research Division to ensure that the results of our work are taken forward wherever possible.



What Makes RVC Unique?

A Tradition of Heritage and Innovation

RVC has a proud heritage of innovation in biomedical and veterinary science, clinical practice and education.

- Our independent status means we are able to innovate and keep at the forefront of theory and practice
- Pioneering approaches to teaching, research and cutting edge clinical provision
- Expertise beyond animal husbandry and an established network of scientific partnerships with internationally renowned RVC experts

Excellence in Teaching and Learning

RVC offers a portfolio of undergraduate, postgraduate and continuing professional development programmes. These are delivered either full-time, part-time or via conventional distance and interactive e-learning.

Supporting the Veterinary Profession

The College provides support for the veterinary profession through its 3 referral hospitals, diagnostic services and continuing professional development courses. The Queen Mother Hospital for Animals is the largest of its kind in Europe, receiving over 8,000 patients each year.

Innovation in the Life Sciences

RVC owns the London BioScience Innovation Centre, London's first centre for life science companies, ranging from entrepreneurial "start ups" to more established companies. This puts the College at the heart of biotechnology and other biomedical research in London and opens the door for research collaboration.

Ideal Location

RVC is one College spread over two campuses, one based in Central London and the other in Hertfordshire. We are ideally located for all international transport links and within easy reach of London's many excellent universities, research hospitals and clinical trials centres.

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Royal College Street,
London,
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