

RVC

Royal Veterinary College
University of London

Annual Report 2005-06



natural evolution
educational revolution



NATURAL EVOLUTION, EDUCATIONAL REVOLUTION

NEW UNDERGRADUATE OPPORTUNITIES

NEW POSTGRADUATE OPPORTUNITIES

NEW CPD OPPORTUNITIES

GENEROUS STAFF/STUDENT RATIOS

NEW LABORATORY SPACES

GROWING HOSPITAL INFRASTRUCTURES

ONGOING BUILDING PROGRAMMES

A RESPONSIVE CURRICULUM

A LEADING ROLE ON THE WORLD STAGE

Two hundred and fifteen years on, the Royal Veterinary College has clearly mastered the art of evolution. In its endeavour to become the world leader in the education of the veterinary professions, is it no stranger to revolution. Over the last decade, the undergraduate student body has doubled in size; we have diversified into the veterinary sciences and into veterinary nursing; and extended our postgraduate offer to include clinical scholarship, masters degrees and PhD training.

To sustain this transformation, we continue to evolve. The steady growth and structural development of our hospitals enhances the clinical experience students get here. The careful management of hospital staffing levels means that staff/student ratios remain enviable. Changes to undergraduate science courses help us meet market demand for specialist disciplines. And by adding to our postgraduate training options, we keep a vibrant veterinary and biomedical research community supplied with exceptional clinical specialists and research scientists.

As student numbers increase, so our infrastructure evolves. The entrance to the London campus has had its first facelift in 75 years; new category II student laboratory

space has been created; and our museum and finance offices have been upgraded.

At the Hertfordshire campus, two new structures are near completion; the Controlled Environment Building for BBSRC-sponsored animal welfare work; and a locomotor and treadmill building for structure and motion research. The LIVE Centre for Excellence in Teaching and Learning is also completed, and now houses the most advanced veterinary clinical skills laboratories in the world.

Over the last year, we have become one of the country's leading providers of Continuing Professional Development (CPD), due in part to the creation of some innovative delivery tools, among them e-CPD. CPD has become mandatory for all practising vets, and advanced courses leading to specialist qualifications have become increasingly modular. So demand is set to rise and we are more than ready to meet it.

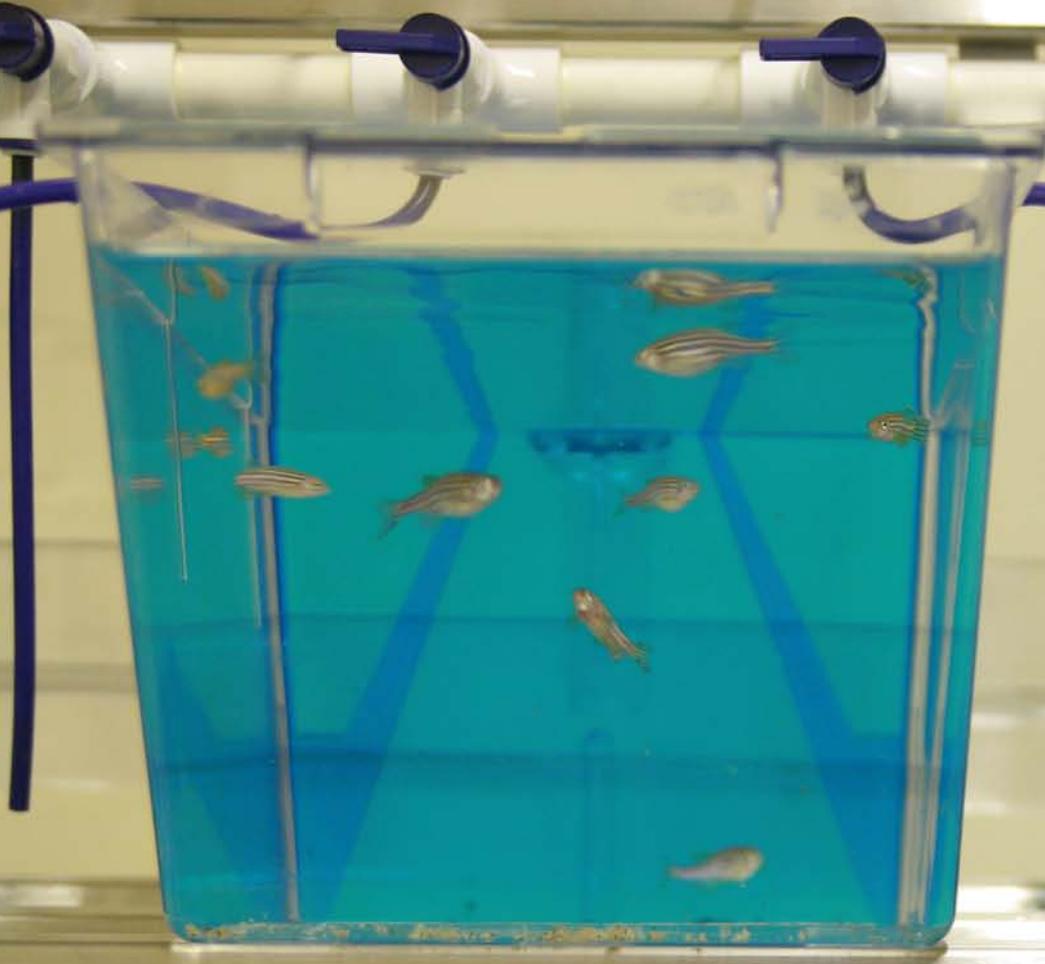
While a massive expansion in medical knowledge has caused infinite opportunities to open up within the veterinary sciences, it has also created great tensions in the realm of education. Since it has become impossible to teach students everything that is known about all aspects of veterinary medicine, our professional accrediting body, the Royal College of Veterinary Surgeons, has identified the skills

that can reasonably be expected of day-one graduates, and those that might be acquired through exposure to caseload during their first year in clinical practice. Our great challenge now is to revolutionise the College curriculum, to ensure that all our graduates have the requisite day-one skills and the ability and appetite to continue learning throughout their professional lives.

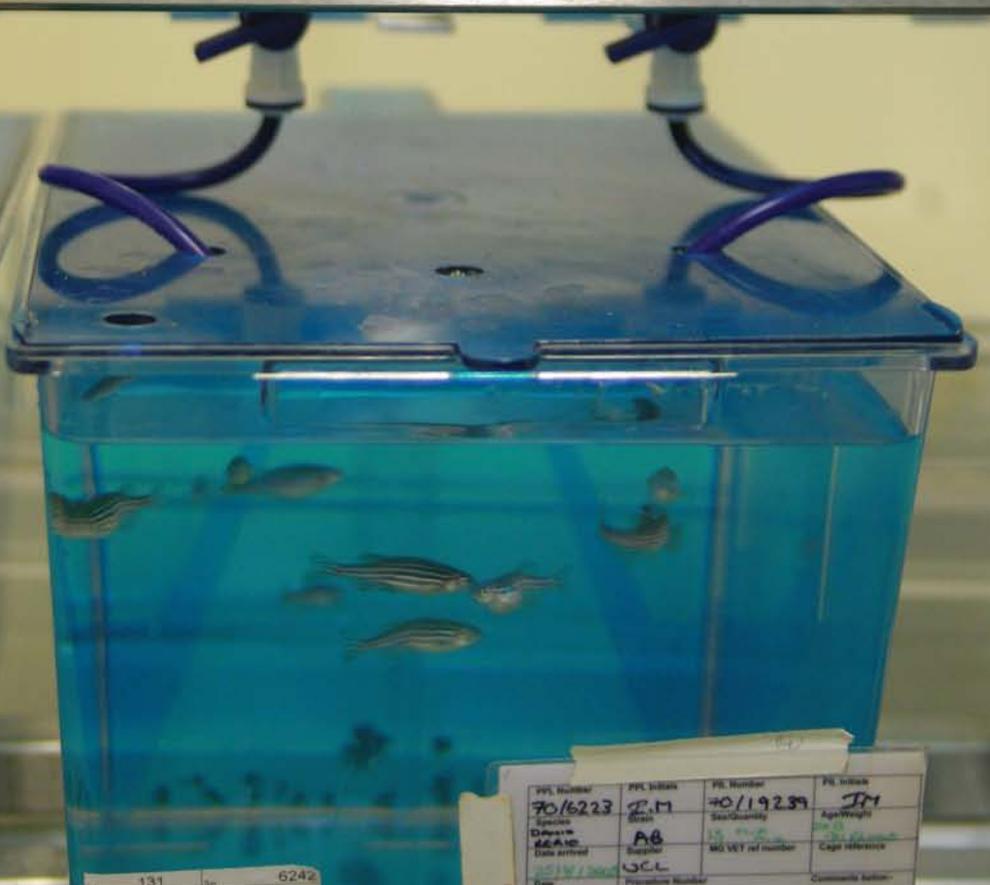
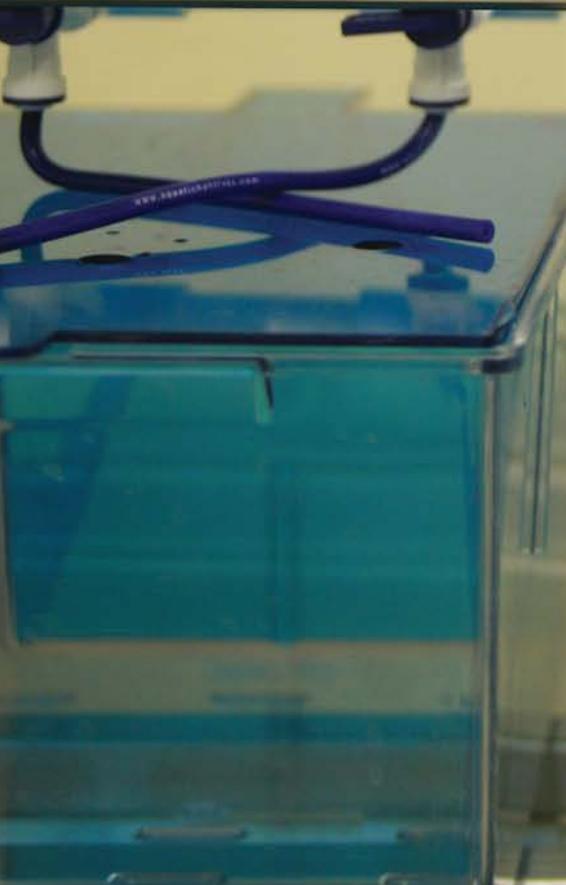
Given the even greater challenges presented by climate change, terrorism and poverty, we also aim to equip our students with the values and skills they need to contribute effectively on the world stage. As communication networks and container transportation create a 'global village' through which people, animals, food and disease move at lightening speed, the Royal Veterinary College will continue to place extraordinary veterinary professionals at the cutting edge of international clinical developments, education and research.



Quintin McKellar, Principal



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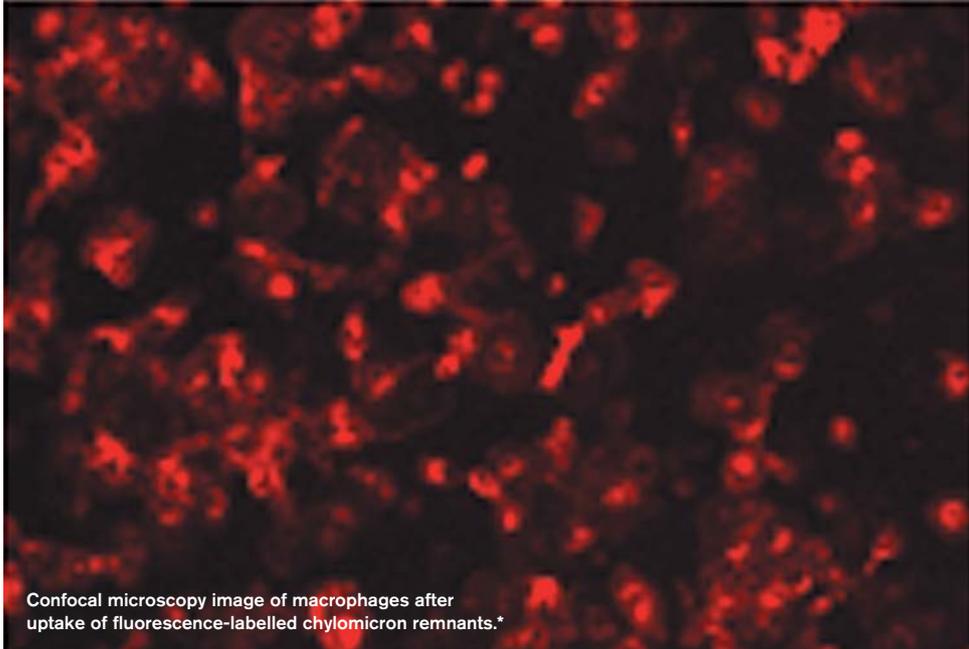
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Our strategy for research at the RVC is to establish and maintain research activity of international quality in focused areas of practical relevance within the broad disciplines that comprise and underpin veterinary science.

RESEARCH FORGING AHEAD



Confocal microscopy image of macrophages after uptake of fluorescence-labelled chylomicron remnants.*

Granted success

The College has maintained its recent high level of success by winning research grants totalling £10.5 million in the last 12 months. Two awards highlight the quality of our research as viewed by the UK Research Councils. These include a BBSRC Doctoral Training Account funding six PhD studentships (run over four years) every year for the next three years and three RCUK Fellowships (each for five years). We have established the first European Phase II Clinical Trials Unit within our hospital with core funding from a pharmaceutical company. This initiative will create new opportunities for clinical research.

Musculoskeletal Biology

Alan Wilson received a Royal Society Wolfson Research Merit Award and a BBSRC Research Development Fellowship (2005 Competition), and Jim Usherwood was awarded a Wellcome Research Career Development Fellowship. Alan Wilson and colleagues were awarded £546,878 by the EPSRC to develop wireless sensor-based systems for enhancing the training of elite athletes, and £586,352 from DEFRA to research automated early lameness detection in dairy cattle.

PhD and intercalating veterinary student, James Mount, who is supervised by Jo Price and Imelda McGonnell, has been awarded a junior fellowship to participate in the third EMBO/ETH conference on regeneration and tissue repair.

At the Resident's Forum of the European College of Veterinary Surgeons Annual Meeting, RVC Senior Clinical Training Scholars won three out of the four available awards. Tom Hughes won best research presentation in the Large Animal division and Matt Smith was a runner-up. In the Small Animal section Karla Lee won the best presentation prize. This is a very impressive result and exemplifies the quality of both our residents and the training programme.

Reproduction Genes and Development

In recognition of her work on dairy cow fertility, Claire Wathes was awarded the Royal Agricultural Society of England's Research Medal for 2006. Paul Watson's group was awarded a US patent for 'Factors for enhancement of sperm survival', and Martin Sheldon was awarded a BBSRC Research

Development Fellowship (2006 Competition) for his work on the interactions between reproduction and immunology with reference to the reproductive tract.

Cardiovascular Biology and Inflammation

Nicola Menzies-Gow received the Dame Olga Uvarov Research Medal 2006 for her research on equine laminitis. Caroline Wheeler-Jones and colleagues have shown that NF- κ B and MAPK pathways are key regulators of COX-2 expression and vasculoprotective prostanoid synthesis in human endothelium. Kathy Botham's team has demonstrated that different dietary fats modulate the influence of chylomicron remnants on the induction of macrophage foam cell formation, an early event in atherogenesis (see adjacent photo).

Infection and Immunity

Neil Stoker's Pathogen Biology Group has made a breakthrough in understanding how *M. tuberculosis* senses oxygen. This fundamental finding might lead on to novel ways of preventing persistence of this bacterium. Janice Bridger's group has completed the genomic sequence of a virus that causes bovine enteric disease, and has shown that this is a previously unknown type of calicivirus.

PhD student Yoshika Yamakawa, who is studying with Dirk Werling's Host Response Group, has been awarded an internship at the RIKEN government research institution in Japan. Yoshika will join one of the leading research groups in the field of dendritic cell research.

The Population Biology and Disease Control Group is contributing to the global effort to combat avian influenza. Dirk Pfeiffer was appointed Chair of the European Food Safety Authority Working Group on the role of migratory birds in the introduction of avian influenza to the European Union. Three meetings of the group have been hosted by the RVC.

Animal Welfare

The new barn for the Centre for Animal Welfare was commissioned during 2006. It provides a unique capability for research with farm animals and features state-of-the-art environmental control and monitoring systems. Initial studies in a major BBSRC programme focus on the environmental biology and management of pigs and poultry and precision livestock farming.

* Photograph courtesy of Kathy Botham

The RVC has continued to be innovative in its approaches to learning and assessment and to receive recognition for the quality of its provision in the veterinary and paraveterinary disciplines at both undergraduate and postgraduate levels.

TEACHING AND LEARNING EMBRACING INNOVATION, ACHIEVING EXCELLENCE



The new Lifelong Independent Veterinary Education (LIVE) Centre at the Hertfordshire Campus



Under review

These days, all institutions are rightly held accountable, and the RVC is no exception. Programmes at both undergraduate and postgraduate level have been favourably reviewed, but this has not stopped our course directors making continuous improvements. The molecular aspects of the BSc in Veterinary Pathology have been enhanced by a further week's discussion of this subject, and the curriculum for the MSc in Veterinary Physiotherapy is being revised to improve the quality of its clinical components. In February, the AVMA extended its recognition for another seven years, concluding in its report that the RVC offers 'a wide range of educational degree programmes that demonstrates a strong commitment to teaching and learning'.

CPD expansion

Our CPD portfolio continued to flourish in 2006 and now boasts a total of 55 traditional, face-to-face courses and four innovative six-week e-CPD courses. In 2007, provision will expand to 59 traditional courses and 11 six-week e-CPD courses. From 2007, the College also plans to contribute towards teaching and assessing the new RCVS modular Certificates of Advanced Veterinary Practice.

Recognising excellence

As part of our determination to recognise and reward staff for their teaching, we are now investing £66,000 a year in a round of individual and team prizes and projects. In 2006, the second year of this scheme, awards were made to support novel models for teaching anatomy, the improvement of reproduction practicals, the enhancement of the undergraduate research experience, improvement of microbiology practicals and easier access for students to clinical diagnostic images.

Facilitating workplace learning

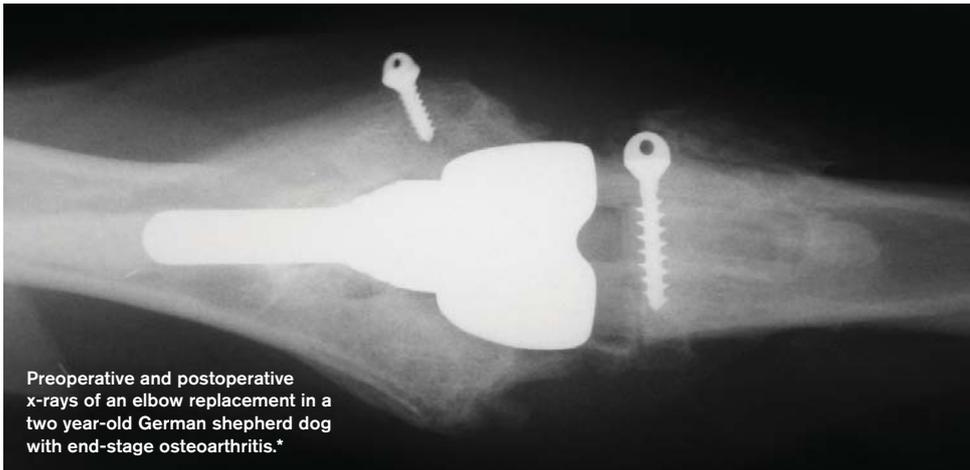
With the support of Orange, a pilot project has supplied students with 3G and wireless-enabled PDAs. As a result, they will be better able to record their case experience and discussions while working in our clinics and in private practice during extramural studies. The aim is to improve 'capture of learning' in the complex workplace environment, and enhance clinical reasoning by providing opportunities for reflection on and comparison of student-generated 'illness scripts'.

Bricks and mortar

Staff and students would wonder what had gone wrong if we did not have building contractors working on our campuses! The last academic year has been no exception. In November 2005, work began on the LIVE Centre for Excellence in Teaching and Learning which will provide dedicated facilities for development of e-learning packages, student consultation and communication and clinical skills. The Centre is due to open officially in February 2007. Building on our achievement in the original CETL bid to HEFCE, a further £483,000 was awarded last year to upgrade student and teaching facilities at the London Campus. This includes the construction of a new Anatomy Museum and a modern microbiology practical classroom which permits safe handling of Hazard Group 2 organisms.

The Clinical Services Division continued to grow this year. We performed particularly well financially, accounting for nearly 25 per cent of College income. To accommodate rising staff and student numbers, we have enhanced facilities and increased caseload in line with our strategic vision. A number of exciting new procedures are now underway in the hospitals, keeping the RVC where it belongs, at the forefront of veterinary practise.

CLINICAL SERVICES GROWING STRONGER



Preoperative and postoperative x-rays of an elbow replacement in a two year-old German shepherd dog with end-stage osteoarthritis.*

A new surgical procedure

Canine total elbow replacement is a relatively new treatment option for dogs with end-stage elbow osteoarthritis. The RVC is one of only a few centres in the UK offering this surgery. It aims to eliminate joint pain but preserve elbow function in dogs otherwise severely disabled by elbow disease.

Blood bank

Through the dedication of a small QMH team, we have become the only veterinary establishment in the UK to have a dedicated blood bank and transfusion service. This enables us to provide first class care to our sickest patients and improve the success rates of treating certain conditions.

New EPR system introduced

A new Electronic Patient Record system installed in the QMH, ERH and LAP has enabled us to improve the service we provide for our clients, referring vets, staff and students. Ongoing developments will make it easier for us to gather information, further enhancing patient care and treatment in the future.

A growing caseload

In the past year, the QMH attracted 14 per cent more cases, a magnificent level of growth given the amount of space currently available. In September 2007, we hope to complete the next development phase, which will enable us to further increase the services offered.

SuperVets

Clinical teams from the Queen Mother Hospital, the Equine Referral Hospital and the Large Animal Practice have featured in this successful prime time BBC TV slot, now in its second series. At its peak, SuperVets attracted viewing figures of around 5.3 million by showcasing the best of 'cutting edge veterinary medicine'. A supporting website and press campaign has successfully generated

interest in the College amongst the general public and tomorrow's aspiring veterinary surgeons. Visit www.rvc.ac.uk/supervets for details of RVC staff and cases featured in the series. Particular thanks go to alumnus Paul Crawford for his work on this project.

Comparative Neuromuscular Disease Laboratory

This new laboratory investigates the clinical and basic science of veterinary and human neuromuscular disorders. Using clinical, cellular and molecular techniques, our aim is to increase understanding of the aetiology and pathogenesis of a variety of selected disorders affecting striated muscle and the central and peripheral nervous systems of animals and humans. In so doing we are committed to establishing improved methods of diagnosis and treatment.

New equine equipment

The Equine Referral Hospital has recently purchased a vet diode laser in conjunction with the Bell Equine Veterinary Clinic. The laser can be used to either cut or coagulate tissue. It will facilitate various surgical tasks including upper airway surgery, skin and ocular tumor removal, general surgical procedures and uterine surgery.

Foal Unit success

The Foal Unit, funded by the Animal Care Trust and opened in 2004, had another good year. A dozen critically ill foals were treated in the 2006 season, one of which developed the rare disorder coenicterus following isoerythrolysis, as shown on SuperVets series two. The overall success rate for foals returning home was 85 per cent, thanks to the hard-working team of staff and students.

Improved biosecurity facilities

The Equine Isolation Unit is being revamped for the beginning of 2007, in order to address the latest biosecurity issues raised by problems encountered in large animal hospitals in the United States. This year the unit has admitted several colitis and strangles cases, all of which have been successfully treated.

* Photograph courtesy of Andy Moores

The Business Development team supports and strengthens every area of College activity. Its aim is to develop a professional, customer-and business-responsive culture. This year has seen the evolution of a more strategic approach to marketing across RVC, coupled with specific market research and marketing support for individual projects and initiatives.

BUSINESS DEVELOPMENTS

TAKING A STRATEGIC APPROACH



Young Entrepreneurs' Scheme Team

YES success

Our Young Entrepreneurs' Scheme team achieved triple success with awards for Best Presenter, Best Plant-based Plan and overall runners-up, in the national competition run by the BBSRC. PhD students Alberto Silva, Eoin Ryan (presenter), Becky Herbert and Veronica Fowler, with lecturer Steven Van Winden had to present a proposal to demonstrate their understanding of the factors required for a successful new company. The Business Development team coached the students and organised a 'Dragons' Den' of venture capitalists, including two LBIC clients, to critique and hone their business model and presentation of the plan.

Funding to support innovation

RVC has been awarded £850,000 by the Higher Education Innovation Fund (HEIF) for the next two years, to support the 'third mission' as undertaken by the Business Development team. In the Institutional Plan submitted to describe use of the funding, RVC identified the key areas as:

- 1 commercialisation of inventions and other opportunities arising from research
- 2 negotiation of optimal terms for contracts, collaboration and consultancy agreements
- 3 developing the marketing focus across the College
- 4 enterprise training directed at all levels – staff, student and in CPD
- 5 management of the London BioScience Innovation Centre

Innovation China UK

The College is part of a prestigious collaboration receiving nearly £5 million from HEIF to help build closer ties between business and higher education institutions and turn ideas into enterprise, through joint projects between UK and Chinese higher education institutes. The funding will support project and business development, technology commercialisation and staff exchange over a period of two years.

Proof of concept funding

Over the year, we received a further £110,000 from the 'Heptagon' proof of concept fund, to develop research projects with commercial potential to a stage at which an industry partner would be interested to collaborate and/or take rights to the arising technology.

LBIC fills up

We have now filled five of our six new laboratories and nine of the ten new offices, with most of the remaining space earmarked for incoming clients. Over the year, three clients, Inpharmatica, Sosei and Pharmaterials, outgrew their space at LBIC and 'graduated' beyond their incubation phase.

More opportunity under Enterprise Elective

Changes to the organisation of the final year elective courses for the veterinary medicine undergraduates have given more students the opportunity to participate in the Enterprise Elective, alongside more conventional clinical studies. The new modular nature of the taught part of the elective enables students to dip into separate single-week programmes focused on different business skills.

2006 has seen the completion and handover of a number of successful projects, in the form of new buildings and major refurbishments, adding valuable space and functionality to the College estate.

CAPITAL DEVELOPMENTS CREATING IMPRESSIVE NEW SPACES



Newly-refurbished London
Campus Reception

Progress at Camden

Work on the London Campus has included the highly successful relocation of the Anatomy Museum and the Students' Union facilities. We have also refurbished the main reception in the Hobday Building and various laboratories on campus. Significant work is in progress to provide refurbished accommodation for the Finance and Estates departments, to be followed with other general office and communal space improvements during 2007.

Two new buildings

The externally funded LIVE and Animal Welfare buildings on the campus in Hertfordshire were handed over in Autumn 2006. They were rapidly occupied by their respective users, keen to benefit from each building's state-of-the-art facilities and innovative designs.

QMH Phase Three

After significant negotiations, the third phase of work to extend the Queen Mother Hospital for Animals has commenced. With phased completion due during 2007, various significant sections of the new building will become available, allowing staff, students and clients to utilise the new facilities at the earliest opportunity. When all the work is completed in the summer of 2008, we will have created the largest small animal hospital in the United Kingdom.

New research centre

The successful allocation of SRIF funds has enabled us to begin planning and designing a new research centre for the control of veterinary infectious and zoonotic diseases at the Hertfordshire Campus. Construction is due to start in spring 2007 and finish later in the year.

Ongoing plans

Other improvements proposed for the College estate during 2007 will include the completion of a new 45-metre locomotion barn, a new security gate house at the Hertfordshire Campus, and a significant number of office refurbishments to provide an enhanced working environment and opportunities for increased collaborative research and clinical services.

Under review

Whilst not yet complete, the College has begun a comprehensive review of its estate. This process will continue throughout 2007, involving extensive liaison and collaboration with staff, students and other stakeholders with significant interests in the College and its services to the wider community.

In the last year, our special initiatives were as innovative as they were collaborative. Taken together, they demonstrate the growing influence of the RVC locally, regionally and nationally and demonstrate our ongoing commitment to education at every level.

SPECIAL INITIATIVES SHAPING FUTURES



Gateway students visiting the facilities at VLA Weybridge

An open gate

In September 2005, we welcomed the first cohort of students onto our Gateway to Veterinary Medicine Programme, which is targeted at applicants from non-traditional, low-income backgrounds. We are delighted to report that the entire group passed their exams and transferred directly to BVetMed Year One. They quickly assimilated into the programme and matched their peers in examinations. One student was accepted by Liverpool University, which is closer to her home. With the recent addition of Bristol University to our affiliates, RVC Gateway students will be even better able to select a programme that best suits their needs. In September 2006, 24 new students were accepted onto Gateway, four passing directly to BVetMed Year One due to excellent A level scores.

Promoting lifelong learning

In June 2006, HEFCE awarded the College £3.73 million to support the creation of VETNET, a national Lifelong Learning Network in the veterinary and related disciplines that aims to facilitate the progression of vocational learners into higher education. VETNET brings together universities, colleges and related organisations, including the Royal

College of Veterinary Surgeons, LANTRA (the skills council for the land-based sector), and the British Veterinary Nursing Association. Although the RVC is taking the lead, the success of VETNET will depend upon six 'hubs' of activity; the veterinary schools at Bristol, Cambridge, Liverpool and London, Nottingham Trent University and the University of Newcastle upon Tyne.

Bloomsbury Learning Environment

The RVC is one of the founding members of a consortium of Bloomsbury colleges using a common Virtual Learning Environment. The original justification for this initiative was the economies of scale for relatively small colleges coming together to purchase shared hardware and joint software licences. In fact, the value of this co-operation has extended to improved technical and pedagogical collaboration and the sharing of best practice between colleges. As a result of this initial success, the consortium has been joined in the past year by two more colleges, Birkbeck and the School of Pharmacy.

Intranet and website revamp

In order to address the significant growth of content on the Intranet, the College has redeveloped the site to make it easier to add new content and navigate around. Our website has also undergone a major redevelopment in the last year. It now receives about half a million unique visits every year and is accessed almost exclusively by prospective students. The graphical interface has been redesigned and the content presented in a more accessible format. Special features have also been added, including a site dedicated to the BBC SuperVets series.

Passed fit by the AVMA

In November 2005, the College became the first British veterinary school to undergo a successful re-accreditation visit from the American Veterinary Medical Association (AVMA). We first achieved accreditation in 1998, and the AVMA re-visits every seven years to ensure that quality and standards are being maintained. The visiting party spent a week at the College, scrutinising the BVetMed degree and its supporting infrastructure. The resulting report made a few recommendations for improvement, but recognised the great steps forward that the College has made in a number of areas, including learning resources, clinical facilities and staffing, and curriculum development.

More access to tutors

A new tutoring system was introduced in October 2005 to implement the QAA requirements for Professional Development Planning (PDP) alongside the current pastoral programme. All undergraduate students now have timetabled sessions several times a year with their tutors in groups of six. They use the time to discuss topical learning issues and record their reflections on lectures, practicals, exams and EMS in an electronic learning diary. An evaluation of the new system showed that 75 per cent of students found the regular tutor contact and group discussion useful.



Students in the new Clinical Skills Centre



LIVE

DR. MC
PAT. ENT

The RVC Alumnus Association is a self-funded association of graduates, staff and supporters of the College. It raises funds for the Students' Union Society and the Animal Care Trust, supports education and student activities, attends College functions, sits on College Committees and generally maintains links between members and the RVC.

PEOPLE ALUMNUS ASSOCIATION



Professors Leslie Vaughan
and David Noakes

Happy 80th Leslie Vaughan

Professor Emeritus Leslie Vaughan qualified MRCVS at the RVC in July 1949. He joined the academic staff as a houseman in the Department of Surgery and Obstetrics, and climbed the academic ladder until he was awarded a personal chair in 1972 as Professor of Veterinary Orthopaedics. Leslie's talent for small and large animal surgery has earned him an international reputation. He has the two vital attributes of a great surgeon; gentleness, causing minimal tissue damage, and speed.

In 1967, he was instrumental in establishing the first RCVS specialist postgraduate qualification, the Diploma in Veterinary Radiology (DVR). This became the template for the whole raft of RCVS diplomas, which have made a major contribution to the raising of clinical standards in veterinary practice. He served on the council of the RCVS from 1967 to 1991, was its Honorary Treasurer from 1973 to 1976, and its President from 1987 to 1988.

Leslie became Head of the Surgery and Obstetrics Department in 1974, and made it the most successful veterinary clinical department in the UK. He was Vice-Principal of the College from 1982 to 1991, and he has been the driving force behind the redevelopment of the QMH. As Leslie passes this important milestone, no-one could question his commitment to the RVC, or ignore the example he has set as an academic clinical scientist. Long may he continue to work in the College he loves and set an example we should treasure.

Happy 70th David Noakes

Having distinguished himself at the RVC (graduating with honours in 1961) David focused on large animal work before joining Unilever Research Laboratories as a research scientist. He returned to the RVC in 1971 as Lecturer in Veterinary Obstetrics and Reproduction in the Veterinary Surgery department. Promotion to Reader in Veterinary Surgery came in 1975, followed in 1977 by his appointment to Professor of Veterinary Obstetrics and Diseases of Reproduction; a post he held until he retired in 2002. In 1991, David also became Vice-Principal and Head of the Large Animal Medicine and Surgery Department.

Despite periods of acute financial stringency, David worked tirelessly to ensure that we continued to make progress in all aspects of surgical endeavour. His record, when it came to obtaining research grants, was exemplary, and his teaching abilities were second to none. He continues to update the textbook on veterinary reproduction and obstetrics that has become the student bible for study in this field.

He has been awarded an FRCVS, a Diploma in Veterinary Reproduction, a DSc and, in recognition of his life's work, the Royal Agricultural Society of England's prestigious Bledisloe Veterinary Award. His ongoing support of the Alumnus Association is much appreciated, and we wish him well in this, his 71st year.

New roles

Following the Alumnus Association AGM, there has been a change of roles amongst some of our officers, with Peter Lane being elected President, and David Noakes taking over his previous role as Secretary of the Association.

Apothecaries' Hall visit

In February, the Alumnus Association had a fascinating visit to the Apothecaries' Hall, in the City of London, where in addition to a tour of the building, we had a highly entertaining talk by the Beadle about the history of the Hall and the activities of the Worshipful Company of Apothecaries. After a brief visit to the Stationers' Hall to see the work of veterinary surgeon, the late Dr Patrick Barden, we met at the Farmers' Club for dinner, where our guest speaker was RVC Principal, Professor Quintin McKellar.

Trip to Ghent

In May, the Alumnus Association visited the veterinary school in Ghent, at the invitation of the Dean, Professor Aart de Kruif. The School, which moved from its historical site in the centre of Ghent some years ago, has excellent facilities which we were able to tour. Professor de Kruif also gave us an interesting talk on the curriculum and organisation of the school, and veterinary education in Belgium, in general.

So passes yet another superb year for the RVC student body. Student numbers are at their highest ever and with this comes greater achievement and success. There are more stories to share than can be related here, so congratulations must go out to everyone for their individual accomplishments.

PEOPLE STUDENTS



Members of the Undergraduate Research Team went to Swaziland in the summer of 2006

Freshers' Week

A well attended and fun packed Freshers' Week ensured that this year was as enjoyable as ever, with one event attended by over 900 people. Sophie Macrae and her team deserve much praise for their hard work on this series of events.

More sporting success

Once again the collective sporting achievements of all our teams led to the RVC retaining the Small Colleges' Cup for a third year running! Thanks go to all the club captains

and Adam Mugford, Clubs and Societies Officer, for the time they have dedicated to helping us achieve this prestigious award.

Team Fantastic

The Netball team have shone brightly this past year, topping the University of London First Division with many well deserved victories. Particular congratulations must go to Josie Leutton who was selected to play for England. Other notable triumphs included the hockey and football teams, and many athletic students took part in the London Marathon.



Final Year student Sean Langton receiving the Animalcare prize from John Bower with the Principal

RAG

This annual event, which stands for Raising and Giving, was headed by Hannah Yeates and Antonia O'Donnell in February and raised thousands of pounds for charity once more. Particular highlights included the screening of 'Ragverts'; a short comedy film produced by College students, and enjoyed immensely by all.

Welfare Week

Spring 2006 saw the introduction of a new Students' Union initiative, Welfare Week. This themed event concentrated on awareness of mental health and associated illnesses, and offered evening activities such as an interactive play 'Practice Imperfect', yoga classes, and much more. This was deemed such a success that it is due to become an annual occurrence.

Project Africa

The student-run research project took place successfully over the summer in Swaziland, South Africa. The aim was to look at tick-borne diseases in cattle and to present a report to the South African Government. For those who participated, the trip was a very positive experience and their findings are due to be published in the coming year.

Graduation and Opening Ceremony

In July 2006, the achievements of student and staff prize winners and 289 undergraduates and postgraduates were celebrated at two exciting graduation ceremonies in new surroundings at Bloomsbury's Logan Hall.

In October 2006, Professor Colin Blakemore, Chief Executive of the Medical Research Council, was guest speaker at the London Campus Opening Ceremony that marked the official start of the RVC academic year.

For a complete list of last year's student prizes, please go to www.rvc.ac.uk/AnnualReport/

PEOPLE STARTERS



LIVE team

LIVE is an educational programme that plans to enhance veterinary education through the development of novel approaches to learning in its new, state-of-the-art LIVE Centre. The Centre houses two unique clinical skills laboratories offering great benefits to students, researchers, practitioners, and any other national bodies or educational institutions which require such facilities. It also contains several offices, three communication skills rooms and advanced multimedia and IT technology, designed to facilitate its sponsorship of innovative veterinary educational projects.

Over the past year, a vast amount of groundwork has been done by a growing team of experts (see below), ahead of the official opening in February 2007. To learn more about the LIVE team and the new Centre, please visit www.live.ac.uk

Members of the LIVE team:

Stephen May, Academic Director of the LIVE Centre
Jeffrey Bullock, NET Developer
Carol Gray, Veterinary Communication Skills Specialist, based in Liverpool
Linda Jones, Senior Lecturer and Work-Based Learning Specialist
Peter Nunn, e-Learning Developer
Birgit Pirkelbauer, LIVE Centre Manager
Martha Rodman, PA to the LIVE Centre Manager
Jane Tomlin, LIVE Fellow in Clinical Reasoning and Assessment
Perdi Welsh, LIVE Fellow and Veterinary Skills Developer
Kim Whittlestone, Senior Lecturer and Independent and e-Learning Specialist

Future appointees:

Sarah Baillie, Fellow in Veterinary Education
Vickie Dale, Fellow in Veterinary Education

Amanda Craig Director of the Clinical Investigations Centre

Amanda graduated from the University of Sydney in 1988. She spent three years in full-time private practice and then completed a Residency in Small Animal Internal Medicine at the University of Sydney. She went on to complete an MSc in Veterinary Clinical Studies with her thesis work on the treatment of Feline Cryptococcosis, including the pharmacokinetics of Fluconazole. Upon completion, she established her own referral dermatology business, later building and establishing a large small animal multi-discipline referral practice in Canberra.

In 2005, she returned to academia and research, taking up a Royal Canin-funded appointment in the department of Physiology and Pharmacology of the Veterinary School of Toulouse. She worked on the pharmacokinetics of an endogenous marker, creatinine, given exogenously to measure glomerular filtration rates in the dog. This involved a large field trial (over 500 dogs) across France.

In September 2006, Amanda became Director of our newly established Clinical Investigations Centre. Her goals are to see the Centre grow in its capacity to facilitate high quality veterinary clinical research across the spectrum of the RVC's research groups and clinicians' interests and expertise, forging commercial ties that are beneficial to the College. Her individual research interests are infectious disease, endocrinology and pharmacokinetics as a diagnostic and therapeutic tool in diseases of small animals.

Ken Smith Professor of Companion Animal Pathology

Ken Smith joined the RVC in Autumn 2006 after working for 18 years at the Animal Health Trust (AHT), where he was head of the pathology group from 2001. Ken has a long relationship with the College, having undertaken his PhD in equine herpesvirology under the joint supervision of Professor Neil Edington at Camden and Dr Jenny Mumford at AHT from 1990 until 1994. He subsequently acted as an external examiner for the pathology elective students and guest lecturer in pathology for the intercalated BSc course in veterinary pathology at Hawkshead from 2002. His research has concentrated on herpesviral diseases in horses and tumours in dogs and cats, and has aimed to improve preventive and treatment strategies for those conditions through a better understanding of the mechanisms of the various diseases. He has an abiding interest in optimising collaboration between veterinary clinicians and basic scientists through the use of pathology as a bridging discipline. Ken has published over 70 scientific papers and has spoken extensively at national and international meetings. He is a member of the Editorial Board of the Journal of Comparative Pathology and the Specialist Advisory Committee on Veterinary Pathology of the Royal College of Pathologists.

Other starters 2005-06

Brian Aldridge, Professor of Production Animal Medicine
Ian Darker, Director of Human Resources
Margaret Kilyon, Head of Admissions
Ian Mehrrens, Director of Estates
Graham Sheret, Head of Building Services
Brian Summers, Professor of Comparative Neuropathology
Kim Whittlestone, Senior Lecturer
Graham Willson, Deputy Director of Estates (Development Services)
Adele Wright, Head of Recruitment & Training

PEOPLE MOVERS



Dr Andrew Rycroft
Reader in Infectious Diseases

After graduating from the University of Leeds with a BSc and then a PhD in Microbiology, Andrew was appointed Lecturer in Bacteriology at Glasgow Veterinary School in 1983. There he established a research group investigating contagious pleuropneumonia in the pig. Work to characterise the bacteria responsible for this disease led to the discovery of the potent species-specific cytotoxin ApxIII, the role of these toxins in invasion and understanding their secretion from Gram-negative bacteria.

In 1992 he was appointed Senior Lecturer in Microbiology at the RVC. Andrew supervised our clinical diagnostic microbiology service for a number of years and established a reputation as an enthusiastic teacher of veterinary undergraduates. His research developed with interests in vaccination against pleuropneumonia; working with pharmaceutical companies and striving to understand the natural protective response against this disease. This has expanded to include studies of canine respiratory disease with Joe Brownlie and bovine uterine infection with Martin Sheldon. Through collaborations with Paul Langford at Imperial College, substantial progress has been made in understanding virulence determinants of *Actinobacillus pleuropneumoniae*, and towards development of a defined, live-attenuated vaccine against pleuropneumonia.

In 2004 he was elected Fellow of the Institute of Biology and was recently appointed Veterinary Microbiologist on the Advisory Committee on Dangerous Pathogens. He was promoted to Reader in 2006.



Jodie Bell
VLE Coordinator

Jodie has been developing and managing online courses and environments for the past eight years, in Australia and the UK. Working for Curtin University in Perth, Western Australia, she assisted in the development of the State's first fully online MBA, which won the Asia Pacific IT&T Award for innovative teaching and learning in 2001. In 2003, she began working for Royal Holloway on the International Scholar Project, the online delivery of four degree programmes in collaboration with the University of London's external programme.

Joining the RVC in 2004 as Virtual Learning Environment (VLE) Administrator, Jodie undertook the mammoth task of extending a successful pilot in online learning across the entire undergraduate and postgraduate curriculum. Blackboard, our VLE, is now embedded in teaching and learning and is being developed and extended year on year. Blackboard has also been taken up by the Continuing Professional Development department, where it has proven to be a popular external course delivery mechanism to veterinary professionals and a source of revenue for the College.

Since 2005 Jodie has managed the VLE, and single-handedly coordinates and delivers the management, administration, training and support of Blackboard across all staff and students at both campuses. It's a challenging, dynamic role, and she looks forward to expanding the Blackboard team in 2007!



Nicky Heyward Saunders
Assistant Director of Finance
(Business Development)

Nicky joined the RVC in April 2003, having been appointed to the newly created post of Business Development Accountant. After graduating from the LSE and Kings College London with a joint degree in European Studies and German and a short stint travelling, she joined KPMG London in 1998, working in their Public Sector Audit Department as a graduate trainee. She qualified to the Institute of Chartered Accountants (ICEAW) in August 2001, and was promoted shortly after to Assistant Manager.

Since joining our Finance Department, Nicky has been responsible for developing the business plans and financial forecast models for the RVC's large-scale capital investment projects including LBIC Phase 3 and the current QMH Phase 3 redevelopment. She is also responsible for the student fee billing process, and overseeing the College's credit control and treasury management functions.

In October 2005, she became Assistant Director of Finance (Business Development), which gave her the new responsibility of overseeing the management accounts reporting process, as well as deputising for the Director of Finance.

Other movers 2005-06

Janice Bridger, Reader
Nina Davies, Education Liaison Manager
Stan Head, Curriculum Development Officer
Andrew Pitsillides, Reader
Elizabeth Steeves, Head of Diagnostic Clinical Pathology
Caroline Wheeler-Jones, Reader

PEOPLE LEAVERS



Alexander Mackenzie (Mac) Johnston

We have to thank the RCVS for 'Mac' Johnston's many years of service to the College. Following the visitation of 1977, in which there was criticism of the College's access to farm animal clinical material for undergraduate teaching, the Farm Animal Teaching Practice (FAPTU) was established at Hawkshead in 1979 under the direction of Angus Carmichael, with Mac as number two. Mac quickly established himself as a popular and competent clinician and teacher, and became actively involved in local veterinary and agricultural affairs. He went on to develop the equine side of the FAPTU which, thanks to Mac, went from strength to strength.

He became Lecturer, and then Senior Lecturer in Veterinary Public Health, bringing a fresh, enlightened and modern approach to the discipline. His advocacy of the holistic concept of 'stable to table' or 'farm to fork' sealed his reputation in the UK and overseas, and he was appointed Professor of Veterinary Public Health in 1998. As a member of the European Association for Establishments of Veterinary Education panels, Mac visited EU veterinary schools, became an external examiner and a regular contributor to radio and TV. For his contributions to the European Food Safety Authority of the European Commission, he was awarded an OBE in 2005.

There is hardly a committee in the College that Mac didn't join. He was Senior Clinical Tutor and Warden of the Halls of Residence for many years, and a formidable student advocate. Mac is a very sociable person and always great company. He never said no to any task asked of him and was a great mentor of young clinicians. Over 27 years he contributed much to the Royal Veterinary College, and will be greatly missed. We wish him and his wife, Jennifer, a long and happy 'retirement' looking after the clinical needs of the equine population in the North of Scotland, and probably beyond.

Dennis Jacobs

Although Dennis's formative years were spent in Kent, he moved north of the border to study veterinary medicine at the University of Glasgow and later gained his PhD working in Glasgow and Copenhagen. He worked in industry for the next five years before the lure of academia proved irresistible and he took up an appointment teaching Applied Biology at the University College of North Wales in Bangor. His initial contract with the RVC was as a visiting lecturer during the early 1970s, which was soon followed by a full-time appointment in 1974; he was promoted to Professor of Veterinary Parasitology in 1989.

During his time at the College, Dennis totally reorganised the teaching of parasitology at undergraduate level, established a clinical parasitology trials unit, supervised numerous postgraduate research students, wrote a beautifully illustrated book on equine parasitology, and contributed several book chapters and more than 145 peer-reviewed scientific papers and reviews to the body of veterinary literature.

Dennis is quiet, kind, approachable and sensitive, whilst at the same time being extremely knowledgeable in his subject; someone with an incisive mind and one who has the profound respect of his colleagues at both national and international levels. Such recognition enabled him to take up several senior positions on veterinary committees both in Europe and worldwide. He has also been Visiting Professor at several universities in the Caribbean and China. He is a former Chairman of the University of London Board of Veterinary Studies and of the Board of Editors of the journal *Research in Veterinary Science*. He is a past President of the British Association of Veterinary Parasitology and a former Member of the Veterinary Products Committee.

Dennis will be sorely missed by all staff and students who came into contact with him; we wish him well in his retirement and will no doubt still see him in the corridors at Hawkshead from time to time!

Other leavers 2005-06

Kevin Corley
John Fisher
Virginia Fisher
Clare Hammond
Simon Harley
Elaine Holt
Ruth Hughes
Clive Solman
Kathleen Tennant
Emma Wilson

PEOPLE

THE LEGACY OF ALAN BETTS



Professor Alan Betts

Former RVC principal, Alan Osborn Betts was born in 1927, the son of a Norfolk farmer. At the age of three he contracted bovine TB from infected milk and took six years to recover. Swine fever destroyed the family herd and fuelled his determination to become a vet. He graduated from the RVC in 1949, went into general practice in Norfolk, and then into a research role at Cambridge University. He investigated swine flu, avian flu and then gnotobiotics (germ-free animals), before training as a Leverhume Fellow at the University of California and attending executive development courses at Cornell.

Alan returned to the RVC in 1964 as Professor of Veterinary Microbiology. He placed an immediate emphasis on professional management, innovative interactive teaching and on grant income, not just scholarly publication, as the key to the College's survival. He became Principal in 1970, and worked hard to re-integrate the RVC into the University of London. As Deputy Vice-Chancellor and then Acting Vice-Chancellor, he was responsible for developing links with industry and capitalising on the IT revolution.

At a time when political benevolence towards universities was on the wane and commercial self-sufficiency was the only way forward, Alan threw his energy into establishing the

fund-raising mechanisms that would ensure the future of the RVC. On the wider stage, he became Treasurer of the RCVS and the BVA. He chaired the EU Veterinary Advisory Committee Working Party that developed quality inspection procedures for vet schools. As consultant to the World Health Organisation, he undertook a mission to develop an international programme in comparative virology.

In 1988, Alan left the RVC to begin nine years with the Imperial Cancer Research Fund as a member of its council and scientific advisory board. Until the end of his life he remained fully engaged with the Comparative Clinical Science Foundation, of which he had been Trustee and Chairman. Poignantly, his death in November 2005 coincided with the publication of a unique joint edition of the British Medical Journal and the Veterinary Record, which focused on the need for greater collaboration on animal and human health.

Alan was an inspirational force to be reckoned with in every aspect of his diverse, extraordinary professional life, and we extend our heartfelt condolences to his wife, Jane, and his children and grandchildren. A memorial service to celebrate Professor Betts's life was held at St Pancras Old Church, Camden and the RVC London Campus in March 2006.

Betts Prize 2006

The Betts Prize for 2006 has been awarded to Dr Lynda Gibbons. This prize, established by the late Professor Alan Betts, recognises outstanding contributions to the improvement or advancement of the College far beyond the normal call of duty. Dr Gibbons became associated with the RVC in 1997 after the closure of the CABI International Institute of Parasitology, where she was Head of Animal Helminthology Biosystematics (i.e. the biology of worms parasitic in animals). Since then, she has pursued her research and scholastic interests at the RVC mostly on a voluntary basis, publishing a number of high quality papers and a prestigious book chapter. A major monograph is nearing completion.

Her expertise was pivotal to the RVC being appointed an FAO Collaborating Centre in Helminthology; one of only six worldwide. She has contributed significantly to animal welfare in developing countries by organising training courses and web-based materials on parasite identification and diagnosis. She is also curator of the important RVC Helminth Collections, which include many rare specimens from African wildlife. She has provided guidance and assistance on an informal basis to a multitude of undergraduate and postgraduate student projects, and given advice on innumerable occasions to RVC researchers, clinicians and diagnostic laboratories. Her contributions have without doubt enhanced the international reputation of the RVC and benefited many members of the College community.



The Royal Veterinary College Animal Care Trust raises funds to facilitate the work of the College's clinical services by supporting clinical staff, purchasing equipment and building new hospital facilities.

ANIMAL CARE TRUST MAKING A VISIBLE DIFFERENCE



Our Patron visits

When the ACT's new patron, Her Royal Highness The Duchess of Cornwall, visited the College in January this year, she saw how the generous donations received by the Trust make a tangible difference to the College's hospitals. Her Royal Highness chatted with staff, students and owners and met some of the patients at the Queen Mother Hospital and the Large Animal Clinical Centre.

Paws for a Cause

Our current appeal, 'Paws for a Cause', is raising funds to help the development of the Queen Mother Hospital. The Animal Care Trust has raised over £2 million of our £5 million target. To support this appeal, donations are gratefully received and items can be purchased from our online shop.

The Alumni Fund

Many thanks to all those alumni who took part in our telephone campaign in the autumn of 2005. The Alumni Fund has been established to raise money for a variety of projects, including the student hardship fund, the renovation of Hawkshead House and the

development of the Queen Mother Hospital. We have received donations and pledges over the next three years of more than £80,000.

Paw Trail a runaway success

If you have visited the Queen Mother Hospital this year, you may have noticed the Paw Trail. Each paw along the trail represents a donation from our generous supporters. So far, it has raised over £35,000 and decorated the hospital reception with over 3,500 named paw prints. The trail is now making its second loop around the hospital walls.

Sponsored horse ride

In September 2005 the ACT held another successful ride at the spectacular Woodhall Park, with the kind permission of Mr and Mrs Ralph Abel Smith. Over 220 horses entered, and we raised over £6,000 for the equine veterinary team.

Sponsored dog walks

Hill's Pet Nutrition generously sponsored two walks this year; in October around the beautiful grounds of Hatfield House, and in May around our own Hertfordshire Campus. We raised a magnificent £12,000.

New equipment

Thanks to many generous donations, the Animal Care Trust has been able to facilitate the purchase of a CO₂ diode laser for the Equine Referral Hospital. This will help our surgeons treat poorly-performing horses who have problems with their larynx. The laser probe is inserted through the horse's nose, so it is less invasive and enables quicker recovery. The laser can also be used for a number of soft tissue injuries, including lameness. A new x-ray processor for the Beaumont Animals' Hospital allows staff to produce radiographs quickly, and a sterilisation system for the Queen Mother Hospital is streamlining the process of cleaning instruments and equipment throughout the facility.

You can help too

For more information on the work of the Animal Care Trust, to get involved in any of our fundraising activities, to enquire about making a donation or leaving a gift in your will, please contact Joanne Hussain on 01707 666237 or email jhussain@rvc.ac.uk. Alternatively, please visit www.rvc.ac.uk/act

Registered charity number 281571



The Royal Veterinary College
Animal Care Trust

Telephone 01707 666237
www.rvc.ac.uk/act

As part of an overall strategy to strengthen the College's presence in the UK and overseas, the focus this year has been on two areas of activity: the assessment and overhaul of our visual identity system, and the forging of stronger links with parts of the world where there is an increasing demand for veterinary expertise.

MOVING FORWARD MAKING A GREATER IMPACT



A stronger presence at home

The College has recently adopted a new corporate identity and along with it has come a review of our mission, vision and core values. Staff and students have been involved in workshops and discussion groups, providing an opportunity to reflect on what the College stands for and how we should be perceived externally, as well strengthening the relationship between our hospitals, fundraising activities and other important business areas.

So what is it that we truly value at the Royal Veterinary College?

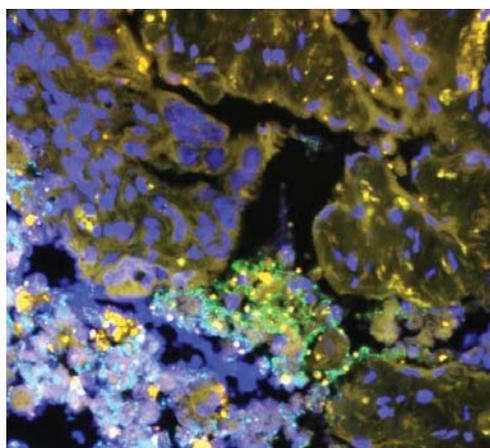
- > Our independent status, which enables us to innovate and keep at the forefront of teaching, research and clinical services; whilst recognising the importance of being part of the wider University of London community
- > Our passion for improving the health and welfare of animals and humans, as well as the ability to act as a driving force for change and improvement
- > The breadth and scope of our activities, despite being a small, specialist institution
- > Pioneering approaches to teaching and learning and cutting edge clinical provision, which are designed to educate the very best professionals in veterinary and biomedical sciences

The new identity system will be officially launched in March 2007 and rolled out over the coming months. Whilst the College Crest remains very much in place, it will be used more sparingly, for ceremonial purposes and in instances where it serves to reinforce our heritage and prestige. Our new image will better reflect the way that staff, students and other groups feel about the College today and will ensure we stand out from the crowd in an increasingly competitive and international market for higher education.

A stronger presence overseas

Professor Colin Howard has been leading an initiative to explore opportunities for the RVC in China, where the expansion of universities is proceeding at a breathtaking rate. The Chinese Government is anxious to strengthen key areas contributing to China's economy. There has been little investment to date in veterinary medicine, and pressure to strengthen expertise in this area is coming from two sources: a concern about human and animal disease and an increasingly affluent population.

RESEARCH GRANTS HIGHLIGHTS



Fighting uterine infection

Professor Martin Sheldon was awarded a BBSRC Research Development Fellowship to study the integration of innate and reproductive endocrinology. Infection of the uterus with bacteria is common in animals such as cattle, sheep, pigs and horses, and even in humans. These uterine infections occur during sexual intercourse, in pregnancy or after parturition, and they cause infertility, abortion, pain and suffering. Uterine disease in animals is also difficult to prevent and costly to treat.

The infertility is caused by damage to the lining of the uterus, by disrupting the development of the eggs within the ovary, and by altering the concentrations of the sex steroid hormones (progesterone and oestrogen) secreted by the ovary, which normally orchestrate the function of the uterus so that it is ready to nurture the fertilised egg. However, in an intriguing twist, the risk of infection depends on these sex steroids; progesterone suppresses immunity while oestrogen enhances it. Why this should be the case remains unclear, yet may be vital when developing treatment and prevention strategies.

Over the next three years the research will work out which cells are the key players for the immune response in the uterus and ovary, and how infection causes infertility. Finally, the research aims to understand the mechanisms by which steroids influence immunity in the uterus. These studies should lead to methods to avoid disease or to exploit the hormone status to resolve uterine infections, as well as improving the treatment of uterine disease and infertility.

Photograph courtesy of Martin Sheldon



Improving the health of pigs

Dr Andrew Rycroft's laboratory continues to pursue research into respiratory and other infectious diseases in the pig. A recent research grant from the BBSRC has been awarded to support an investigation of gene transfer in *Mycoplasma hyopneumoniae*, the delicate micro-organism that causes enzootic pneumonia in the pig. Another BBSRC award has been made to investigate the persistence of *Actinobacillus pleuropneumoniae* in the respiratory lymphoid tissues. This organism is carried in the pig tonsil for many weeks or months. From there it can be passed to other pigs via nasal secretion or invade the respiratory tract and cause disease. The bacterial factors needed for it to persist at this site have not previously been investigated.

Funding also continues to support the development of defined attenuated strains of *A. pleuropneumoniae* as live vaccines in the pig and, in co-operation with Imperial College, to develop a multi-locus sequence typing scheme for understanding the taxonomy and evolution of this pathogen. With Professor Peter Lees in pharmacology, the laboratory is conducting DEFRA-funded work towards improving the means of determining dosage of antimicrobial drugs to minimise the development of antibiotic resistance.

Finally, a Bloomsbury Consortium studentship has been awarded to investigate the therapeutic value of enzymatic depolymerisation of capsular polysaccharide of *Streptococcus suis*. This pathogen is a common cause of meningitis and infective arthritis in piglets, which usually fails to respond to conventional antibiotic therapy. Such investigations in animals may also lead the way to novel therapy of meningitis in human children.

Photograph courtesy of Andrew Rycroft



Foetal programming of appetite and obesity

Professor Neil Stickland and Dr Stephanie Bayol have now concluded the first phase of their ongoing research into the effects of eating junk food during pregnancy and lactation. Their findings show that offspring have a significantly higher chance of becoming obese and developing Type 2 diabetes.

In the study, rat offspring whose mothers consumed junk food during pregnancy and lactation were inclined to over-eat and to choose junk food when offered a healthy option. They were also much more likely to become obese and choose junk food than rats fed the same junk food diet, but not until after they had been weaned.

In the offspring of the junk food-eating mothers there was also evidence of metabolic alterations such as insulin resistance, which can lead to the development of Type 2 diabetes much earlier in life.

When linked to the human model, this research reveals that junk food consumed during pregnancy and lactation could be having a similar effect. Therefore future mothers need to be aware that pregnancy is not the time to over-indulge on sugary and fat-filled treats, because it could cause irreversible damage to their unborn children.

The research team will now look at the longer-term effects of a maternal junk food diet on the development and health of offspring – and at the possibility that it causes or contributes to hyperactive behaviour in offspring.

Photograph courtesy of Neil Stickland and Stephanie Bayol

RESEARCH GRANTS AWARDED 2005-06

Veterinary Basic Sciences

Funding body	Grant holder	Project title	Sum awarded (£)
BBSRC	Dr R Fowkes	Transcriptional and functional regulation of the pituitary guanylyl cyclase-B/cyclic GMP (GC-B/CGMP) system	230,105
Cerebra	Dr J Wakeling, R Delaney, I Dudkiewicz	Assessing cerebral palsy by direct measures of muscle dysfunction	3,000
IDEXX Laboratories	Prof J Elliott, A Boswood	Sponsoring the study of the natural history of Mitral Valve disease in the dog	15,000
BHF	Dr C Lawson	Role of anti-ICAM 1 antibodies in cardiovascular diseases	99,563
Wellcome Trust	Dr K Patel, Dr Evans (Sussex University)	Cellular and molecular investigations into a novel mechanism of myoblast translocation used during the morphogenesis of pectoral and pelvic muscles	192,596
Dechra Pharmaceuticals Ltd	Dr S Bailey	Clinical drug trial consultancy	11,200
EU	Prof N Stickland	Reduction of malformation in farmed fish species FINEFISH	137,039
Waltham	Prof J Elliott, Dr S Bailey	Extension to VE91: Equine laminitis: understanding the intestinal events which lead to digital ischaemia	4,100
University of London Central Research Fund	Dr C Lawson, Dr K Botham	Diet and atherosclerosis: effects of dietary fats on monocyte activation	3,430
University College Dublin	Prof M Binns	Genotyping equine DNA samples	97,812
University of London Central Research Fund	Dr J Wakeling	Spine inflexion in the equine back	2,625
BBSRC	Dr R Lawrence	The eosinophil: Anti-parasite effector cell or mediator of pathology?	300,786
Anatomical Society	Dr I McGonnell, Dr A Pitsillides	Like a hole in the head: Embryonic development of the cranial foramina	48,000
Spanish Ministry of Education & Science	Dr K Botham	HIV and heart disease: influence of chylomicron remnants derived from orujo oil on macrophage foam cell formation	10,320
BBSRC	Prof A Goodship, N Loveridge (Cambridge)	Spatial clustering of cortical remodelling and the temporal effects of reduced mechanical loading on bone micro-architecture	76,411
HBLB	Prof J Price, Prof M Binns, Dr K Verheyen	A study of inherited musculoskeletal diseases in Thoroughbreds	344,001
BBSRC	Prof P Chantler, Prof A Williams, Dr S Bailey, Prof K Patel, Dr K Botham, Prof J Price, Dr I McGonnell, Dr C Wheeler-Jones, Dr J Patterson-Kane, Dr D Palmer, Prof L Lanyon	A multi-disciplinary proposal for a new confocal microscope at the RVC	190,765
RCVS Trust	M Kleinz	Apelin in canine heart failure	10,000
DEFRA	Prof P Lees, Dr A Rycroft, Prof D Pfeiffer, J Fishwick, Prof J Elliott, Prof Q McKellar	Minimising the emergence of resistance to antimicrobial drugs through PK-PD modelling	336,553
DEFRA	Dr A Wilson, Prof M Sheldon	Automated early lameness detection in dairy cattle	586,352
Wellcome Trust	Dr I McGonnell	Summer scholarship for Miss S J Chen	1,440
Pfizer	Prof J Elliott	New researcher programme	2,000
Heart Research UK	Dr C Wheeler-Jones, Dr C Lawson	Protease-activated receptor-2: an anti-inflammatory target on endothelial cells?	37,849
Kennel Club Charitable Trust	Prof M Binns	Mapping the disease locus for posterior polar cataract in the Irish red and white setter	26,000
Royal Society	Dr J Wakeling	Conference grant	600
EPSRC	Dr A Wilson	SESAME: Sensing for sport and managed exercise	546,878
BHF	Dr G Baxter	Role of Rho-dependent kinase in mediating reperfusion injury	156,609
American Kennel Club	Prof M Binns	Candidate gene markers for epilepsy in beagles and other breeds	9,098
SPARC	Dr D Palmer	Unnatural ageing in natural killer cells	36,765
Dechra	Dr S Bailey, Prof J Elliott	The effects of domperidone on the contractility of equine digital blood vessels in vitro	6,255
BBSRC	Prof R Scaramuzzi, Dr M Khalid, B Campbell	Nutritional regulation of negative feedback homeostasis in the hypothalamo-pituitary-ovarian axis of sheep and its effect on folliculogenesis	508,936
HBLB	Dr S Bailey, Prof J Elliott, Dr F Cunningham	Tissue damage in equine endotoxaemia: synergistic effects of endotoxin and hypoxia upon the microvasculature	121,692
Vetoquinol	Prof J Elliott	Investigating the plasma phosphate and plasma parathyroid hormone concentrations for cats	9,575
Waltham	Prof J Elliott	Extension to existing project-hypertension and renal insufficiency in cats	15,553

Veterinary Clinical Sciences

Funding body	Grant holder	Project title	Sum awarded (£)
DEFRA	Prof D Pfeiffer, Prof D Lloyd	Methicillin resistant Staphylococcus aureus in companion animals and association with the human healthcare sector	150,672
FAO	Prof D Pfeiffer	GLiPHA 4 AI Socio-economic information strategy	22,800
Home of Rest for Horses	E Eliashar	Clinical scholarship in equine surgery	22,470
VLA	Prof D Pfeiffer	Scrapie consultancy projects SE0213 and SE0227	10,000
PetPlan	Dr A Hendricks, K Stevens	Prevalence clinical characterisation and heritability of non pruritic symmetrical alopecia syndromes in the greyhound	5,981
Pfizer	Prof M Sheldon, Bryant (Cambridge), Littlewood (Pfizer)	CASE Studentship – Endocrine regulation of innate immunity in the genital tract	68,768
DEFRA	Dr J Guitian, Prof D Pfeiffer	Analysis and design of scrapie surveillance strategies in Great Britain	114,768
Home of Rest for Horses	Dr N Menzies-Gow, Dr S Bailey, Prof J Elliott	The role of Endothelial cell dysfunction in chronic laminitis	66,235
Ministry of Agriculture New Zealand	Prof N Gregory	Consultancy	4,000
HBLB	Dr R Weller, Dr A Wilson	Dynamic conformation – the effect of conformation on equine locomotion – vet research training scholarship for Dr Marta Ferrari	74,070
Pfizer	Prof D Church, Prof J Elliott	Framework agreement – Phase II Clinical Trials Unit	400,134
BBSRC (IGER North Wyke)	Dr T Demmers	Annual update UK Ammonia Inventory	4,576
Heptagon	Dr M Khalid, Prof R Scaramuzzi, Leethongdee, Kershaw	A technique of transcervical (TCAI) in sheep	89,600
Pfizer	Prof J Slater, Dr A Rycroft	Genetic basis of host-pathogen interactions of the pig pathogen <i>Streptococcus suis</i>	20,295
FAO	Prof D Pfeiffer	Epidemiological investigations on avian influenza	25,865
RCVS Trust	D Chan	Purchase of Wescor Colloid Osmometer 4420	5,009
RCVS Trust	Dr D Werling	Heterogeneity of TLR expression on bovine antigen presenting cells	4,500
HTSPE	Prof D Pfeiffer	Specialist veterinary advice in avian influenza	10,050
Pfizer	Dr J Maddison	Consultancy work in providing scientific advice and CPD presentation to Pfizer	18,000
NC3Rs	Prof J Slater, Dr Tucker (Cambridge)	Development of an air-interface in vitro organ culture model (IVOC) for pathogenic infections of bovine respiratory epithelium	49,234
Royal Society	Prof M Sheldon	Conference travel grant	670
BBSRC	Prof J Slater	Comparative adherence of bovine and ovine <i>M. Haemolytica</i> strains to air interface respiratory organ culture models from cattle and sheep	240,097
HBLB	R Piercy, P Zammit, S Brown	Developing an in vitro model of equine muscle disease through transformation of a skin-derived fibroblasts	103,882
HBLB	Dr K Verheyen, Prof J Price, Dr B Jackson	Epidemiology of joints in Thoroughbreds in training	196,314
UK Resource Centre for Women (part of DTI)	Dr K Verheyen	Travel grant from UK Resource Centre for Women	1,236
Home of Rest for Horses	Dr K Verheyen	Training scholarship in equine clinical epidemiology	80,000
Wellcome Trust	J Fishwick	Expenses for leadership programme at Cornell University for Laura Spoor	4,163
BBSRC	Prof M Sheldon	Research development fellowship: Integration of innate and reproductive endocrinology	272,276
Novartis	Dr O Garden	CASE Studentship – characterisation of regulatory T cells in healthy dogs	67,000
IGER	Dr T Demmers	Updating the inventory of ammonia emissions from UK agriculture for years 2005 and 2006	17,250
DEFRA	Dr T Demmers, Crook, Nemitz	Characterising poultry dust properties, assessing the human health implications, quantifying emission levels and assessing the potential abatement	461,188
Dogs Trust	Dr M Khalid	Molecular studies of urinary incontinence in the dog	83,516
EU-FP6	Dr J Guitian, Dr Van Winden, Prof D Pfeiffer	Qualitative and quantitative risk assessment for the presence of Map in food products	70,948
Pfizer	Prof D Pfeiffer	Extension-analysis of field data on marked IBR vaccine	5,000

Pathology and Infectious Diseases

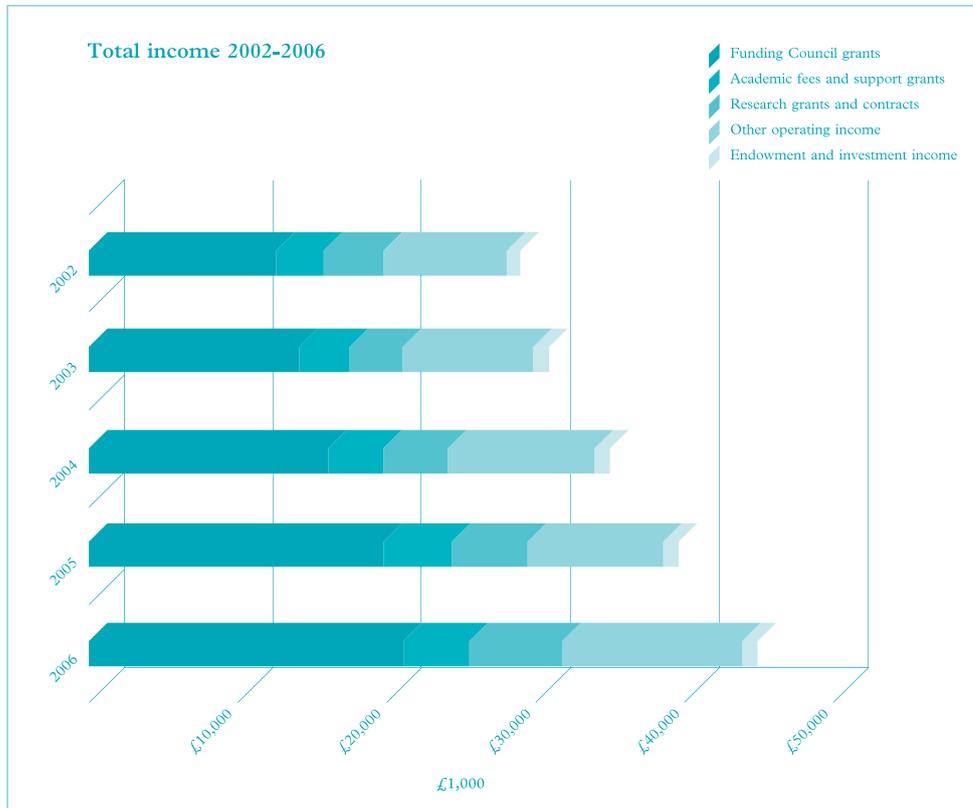
Funding body	Grant holder	Project title	Sum awarded (£)
Queen Mary Innovation Ltd	Prof C Howard	Consultancy	51,000
Pfizer	Dr A Rycroft	Expression and analysis of two immunogenic proteins from <i>Mycoplasma hyopneumoniae</i>	20,295
Pfizer	Prof J Brownlie, K Erles	Development of a new canine respiratory vaccine	474,797
Pfizer	Dr D Werling	Development of a new vaccine delivery tool	166,243
Pfizer	Dr D Werling	Measurement of local immune responses in young calves after vaccination with Rispoval RS+P13 intranasal	105,660
Pfizer	Dr D Werling	Heterogeneity of TLR expression on bovine antigen presenting cells	4,500
Pfizer	Prof J Brownlie	BVDV vaccine in a field trial	200,815
Masterfoods	Dr B Catchpole	Better diagnosis and classification of canine diabetes mellitus from phenotype to genotype	123,005
Merial	Dr B Catchpole, S Baines, T Scase (AHT)	On the RAIL of a cure for canine mast cell tumours (CASE studentship-Richard Elders)	12,000
Imperial College Innovations	Dr A Rycroft	Screen of live attenuated mutants of <i>A. pleuropneumoniae</i> : safety and protective efficacy	6,000
Royal Society	Dr S Kendall	Travel grant	735
Quality Meats Scotland	Dr A Nevel (nee Dawson)	Reproductive reasons for culling sows, abattoir study	9,588
Wellcome Trust	Prof J Brownlie	Student scholarship for Justine Shotton	4,363
BBSRC	Dr A Rycroft	Determination of the vaccine potential of candidate <i>Actinobacillus pleuropneumoniae</i> proteins	10,358
Heptagon	Dr A Rycroft	Preventing colonisation of the porcine respiratory tract tonsil by pathogenic <i>Actinobacillus pleuropneumoniae</i> using a designer probiotic	14,734
Bayer	Dr R Bond	EU flea susceptibility monitoring 2006	34,566
Pfizer	Dr B Catchpole	The role of canine MHC genes in immune responses to vaccine antigen in dogs	25,695
Pfizer	Dr D Werling, La Ragiona	Interaction of TLR5 with Salmonella flagellin mutants	40,608
Novartis	Prof J Brownlie	Extension of fellowship – J Heaney	108,538

College Wide Research Awards 2005-06

Funding body	Grant holder	Project title	Sum awarded (£)
Wellcome Trust	Prof J Elliott	Value in people award scheme	310,000
EPSRC	Prof J Elliott	RC UK academic fellowships	375,000
Wellcome Trust	Prof J Elliott	Leadership training program for Ms Alexia Wilson	4,278
BBSRC	Prof J Elliott	Doctoral training grant	1,445,328

2005-06 was another excellent year financially for the College, generating a surplus of 2.8% of our overall income, well above the 1.5% target. Turnover for the year rose by £5.8m, or 15% (2004-05: 13%), and it was another particularly successful year for research grants and contracts, which increased by 30%.

FINANCIAL HIGHLIGHTS 2005-06



Income from Funding Council grants rose by 11% to £21 million (2004-05: 20%) and represents 47% of the overall income received by the College.

Income from Research Grants and Contracts has increased by 30% to £6.2 million, up by £1.4 million (2004-05: 10%), primarily as a result of larger awards made by the Research Councils and UK Government Bodies (up by 60% and 56% respectively). UK-based charity income also increased by £0.5 million (34%).

Income from clinical services has increased by £1.7 million (19%). This growth was again due to the increased activity in the Queen Mother Hospital. Our other clinical services performed strongly as well.

Staff costs went up by £3.4 million (16%) as a result of additional recruitment to support activity, as well as the implementation of the single spine and pay harmonisation.

Other operating expenses increased by 12% (2004-05: also 12%), primarily in the areas of:

- > Student and educational expenditure (25%);
- > Small equipment and repairs (23%) and minor works and maintenance (21%).

Expenditure on additions and improvements to the Estate accounted for £3.1 million worth of expenditure, including just under £1 million invested in research and clinical equipment during the year. Major projects included the new building for the LIVE Centre for Excellence in Teaching and Learning, which was completed in the latter part of 2006, and a new animal welfare barn. Work also started on a Centre for the Control of Veterinary Infectious and Zoonotic Diseases, funded in part by the Funding Council's Science Research Investment Fund (SRIF). The College also started work on Phase 3 of the Queen Mother Hospital (QMH) during the year.

A net cash inflow of £4.4 million from operating activities has continued to keep the College in a strong cash position, with an increase in cash for the year of £0.5 million.

Legacies of £0.15 million (2004-05: £0.24 million) have been received by the Animal Care Trust (ACT) during the year. The ACT is currently focusing their fundraising activities on the QMH Phase 3 development, which will convert some existing facilities as well as extending the building further. Endowments held by the College increased by £1.5 million in the year (15%), after taking account of appreciation and expenditure against endowment funds.

The College's investment portfolio is managed by Merrill Lynch Investment Managers Ltd (which, in September 2006 merged with Blackrock). The market value of the College's share of the portfolio increased by £1.6 million during the year, up by 18%.

FINANCIAL ACTIVITY FOR THE ROYAL VETERINARY COLLEGE FOR THE YEAR ENDED 31 JULY 2006

Income and expenditure accounts

	2006 £000	2005 £000
INCOME		
Funding council grants	20,985	18,874
Academic fees and support grants	4,049	3,572
Research grants and contracts	6,195	4,781
Other operating income	12,413	10,469
Endowment income and investment income	743	893
TOTAL INCOME	44,385	38,589
EXPENDITURE		
Staff costs	24,630	21,250
Depreciation	3,078	2,811
Other operating expenses	14,914	13,258
Interest payable	511	486
TOTAL EXPENDITURE	43,133	37,805
SURPLUS/(DEFICIT) on continuing operations	1,252	784
Transfer from/(to) specific endowments	5	122
SURPLUS/(DEFICIT) RETAINED WITHIN GENERAL RESERVES	1,257	906

Balance sheets

	2006 £000	2005 £000
Fixed Assets		
Endowment asset investments	11,646	10,174
Current assets	9,379	4,992
Creditors – amounts falling due within one year	(8,767)	(6,242)
Total assets less current liabilities	53,829	50,454
Creditors – amounts falling due after more than one year	(7,715)	(7,983)
Provisions for liabilities and charges	-	-
NET ASSETS	46,114	42,471
Deferred capital grants		
Specific endowments	9,380	7,999
General endowments	2,266	2,175
General reserve	14,547	13,290
TOTAL FUNDS	46,114	42,471

STATEMENT OF FINANCIAL ACTIVITIES FOR THE ANIMAL CARE TRUST FOR THE YEAR ENDED 31 JULY 2006

	General Funds £000	Restricted Funds £000	2006 Total £000	2005 Total £000
INCOMING RESOURCES				
Donations and Gifts	12	321	333	489
Legacies	39	109	148	240
Investment Income	-	55	55	40
Other income	39	-	39	37
TOTAL INCOMING RESOURCES	90	485	575	806
COST OF GENERATING FUNDS				
Fundraising and publicity	126	-	126	134
CHARITABLE EXPENDITURE				
Buildings and Academic Support	-	73	73	60
Support for College Activities	30	80	110	185
Management and Administration	229	-	229	137
TOTAL RESOURCES EXPENDED	385	153	538	516
NET INCOMING RESOURCES for the year	(295)	332	37	290
OPENING BALANCES of total funds	874	1,309	2,183	1,893
CLOSING BALANCES of total funds	579	1,641	2,220	2,183

All activities derive from continuing operations.

GOVERNANCE

<u>Patron</u>	<u>Members appointed by organisations</u>	<u>Ex-Officio</u>
His Royal Highness The Duke of Edinburgh KG KT	Privy Council The Rt Hon Frank Dobson MP	Professor Q A McKellar BVMS PhD DVM DipECVPT CBiol FIBiol FRAGS MRCVS FRSE (Principal)
The Council (as at 31 July 2006)	Secretary of State for Environment, Food & Rural Affairs J C Milne BVetMed MRCVS	Secretary of the Council Mrs E C Acaster
The Officers of the Council	Secretary of State for Health Dr A Wight MBBS MSc FRCPath	Fellows of the Royal Veterinary College
Chairman The Most Hon The Marquess of Salisbury PC DL	Secretary of State for International Development (Vacancy)	Her Royal Highness The Princess Royal GCVO (1987)
Vice-Chairman Professor P M Biggs CBE FRS DSc DVM FRCVS FRCPath FIBiol	Royal Society Professor P M Biggs CBE FRS DSc DVM FRCVS FRCPath FIBiol	Professor P M Biggs CBE FRS DSc DVM FRCVS FRCPath FIBiol (1983)
Hon Treasurer J H Chatfeild-Roberts BA	Royal Agricultural Society of England (Vacancy)	W Plowright CMG FRS DVSc FRCVS (1987)
	Royal College of Veterinary Surgeons Professor C J Gaskell BVSc PhD DVR MRCVS R Green BVetMed MRCVS	Miss W M Brancker CBE FRCVS (1989)
	Council of the University of London Professor M G J Farthing DSc(Med) MD FRCP FMedSci (Vacancy)	Professor L C Vaughan DSc FRCVS DVR (1995)
	Corporation of London I Luder BSc(Econ) FCA FTII FRSA	The Right Hon The Earl Cadogan DL (1997)
	British Veterinary Association E A Chandler BVetMed FRCVS	The Right Hon Lord Prior PC (1999)
	Academic Board of the College Professor D Church BVSc PhD MACVSc MRCVS	Professor L E Lanyon CBE BVSc PhD DSc MRCVS FMedSci (2005)
	Professor S May MA VetMB PhD DVR DEO FRCVS DipECVS	Honorary Fellows
	Professor J Price PhD BVSc BSc	Edmund Vestey TD DL (1994)
	Professor N Stickland PhD DSc BSc	Mrs Jean Sainsbury (1994)
	Professor D C Wathes PhD DSc BSc	George H R Ward FCA (1994)
	Professor A Williams BVMS PhD MRCVS DipECVP	Sir Gordon Shattock MRCVS (1994)
		Dame Bridget M Ogilvie ScD FIBiol FRCPath (1994)
		John K Pool (1994)
		Tony Veal (1994)
		Robert Luff CBE OSTJ (1994)
		Mrs Jessie Nye (1994)
		The Rt Hon Lord Wolfson of Marylebone (1994)
		Dame Pauline Harris DBE (1994)
		Patsy Bloom (1997)
		Professor Leo Jeffcott MA BVetMed PhD DVSc FRCVS (1997)
		Sir Brian Fender CMG (2001)
		Professor Ken Goulding BSc PhD HonDSc CBiol FIBiol (2001)
		Christopher Sporborg CBE (2001)
		Richard Carden (2003)
		Brigadier Andrew Parker Bowles (2003)
	Members co-opted by the Council	
	The Most Hon The Marquess of Salisbury PC DL	
	J H Chatfeild-Roberts BA	
	I B Flanagan FRICS	
	Professor D Noakes BVetMed PhD DSc DVRep DipECAR FRCVS	
	Miss V Collingwood	
	Dr G Schild CBE DSc	

CORPORATE GOVERNANCE YEAR ENDED 31 JULY 2006

- 1 The purpose of this statement is to enable readers of the College's Report and Accounts to obtain a better understanding of the governance and legal structure of the College.
- 2 The College endeavours to conduct its business in accordance with the seven Principles identified by the Committee on Standards in Public Life, namely selflessness, integrity, objectivity, accountability, openness, honesty and leadership. It also acts in accordance with the guidance provided by the Committee of University Chairmen in its Guide for Members of Governing Bodies of Universities and Colleges in England, Wales and Northern Ireland, in a manner appropriate to the circumstances of the College.
- 3 The College is an independent corporation, whose legal status derives from a Royal Charter granted in 1956, although the College can trace its history as a corporate body back to 1791. Its objects, powers and framework of governance are set out in the Charter and its supporting Statutes.
- 4 The Charter and Statutes require that the government of the College shall be vested in the Council, which has management and control of the College and administers all its property and income. The Council has a majority of members from outside the College (known as lay members) from whom the Chairman, Vice-Chairman and Treasurer are by custom elected. None of the lay members receive any payment for the work they do for the College, apart from the reimbursement of expenses.
- 5 The Statutes also require that there shall be an Academic Board, members of which are the Professors of the College and representatives of the teaching staff, and of which the Principal is Chairman. The Board advises the Council on all academic matters.
- 6 The principal academic and administrative officer of the College is the Principal, who under the Statutes is responsible for the conduct of the College. Under the terms of the formal Financial Memorandum between the College and the Higher Education Funding Council for England, the Principal is the designated officer of the College and in that capacity can be summoned to appear before the Public Accounts Committee of the House of Commons.
- 7 Although the Council ordinarily meets three times a year, much of its detailed work is initially discussed in Committees, in particular the Finance Committee, the Audit Committee, the Nominations Committee and the Senior Staff Remuneration Committee. All Council Committees are formally constituted with terms of reference and specified membership. Many include a significant proportion of lay members. All Committees report formally to the Council.
- 8 As Chief Executive of the College the Principal exercises considerable influence on the development of institutional strategy, the identification and planning of new developments and the shaping of institutional ethos. Senior academic and administrative officers all contribute in various ways to these aspects of the College's affairs but the Principal remains responsible for the conduct of the College.
- 9 The College maintains a register of interests of members of the Council.
- 10 Any enquiries about the constitution and governance of the College should be addressed to the Secretary to Council.

London Campus
Royal College Street
London NW1 0TU
t 020 7468 5000
f 020 7388 2342

Hertfordshire Campus
Hawkshead Lane
North Mymms
Herts AL9 7TA
t 01707 666333
f 01707 652090

The London BioScience
Innovation Centre
t 020 7691 1122

Communications Management
(Press Office)
t 01727 733889

Animal Care Trust
t 01707 666237
f 01707 666382

www.rvc.ac.uk

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