

ROUNDHOUSE

Newsletter of the
Veterinary Science Foundation
of the University of Sydney

Issue 15 November 2006



because
animals
matter

NEW WILDLIFE
HEALTH AND
CONSERVATION
CENTRE



ROUNDHOUSE IS PROUDLY SUPPORTED BY

Bayer HealthCare
Animal Health



KRISTEN CLARKE

Wildlife Health and Conservation Centre activities are based in the new veterinary clinic on the Camden campus, designed to deliver high quality medical and surgical care for wildlife and client-owned exotic pets. Opening in January 2007, it includes specialised wet and dry dens, other caging for a wide range of species and office space for postgraduate and veterinary students. Specialised laboratory facilities for bench top research are located in the adjacent Shute building. Gordon & Valich Architects.

CONTENTS
ISSUE 15 NOVEMBER 2006

- 2 New team for the VSF
- 3 Wildlife Health & Conservation Centre
Our new WHCC Director
- 4 Shark conservation
- 5 Helping the Tassie Devil
Australian Sea Lions
- 6 Laterality in dogs
- 8 Associate Professor Tony English AM

ONWARDS AND UPWARDS
FOR THE FACULTY OF VETERINARY SCIENCE

I have been Dean of the Faculty of Veterinary Science for just two years, and it has been an exciting time for me and a very productive one for the Faculty. We have achieved many of our strategic goals in teaching, research and service to the University and community.

Notable highlights include benchmarking our BVSc course internationally with the American Veterinary Medical Association, the successful launch of the new Animal Veterinary Bioscience degree, continued increase in our research activities at both Sydney and Camden campuses, and the improved performance of the Veterinary Teaching Hospitals.

A significant challenge faced this year has been the major restructure of the University. With the cessation of the College system, we have been placed in a group of faculties with Science and Agriculture, and this will provide excellent opportunities for collaboration and growth of our future academic programs.

One of the most immediate opportunities for the Faculties of Veterinary Science and Agriculture, Food and Natural Resources (FAFNR) is the development of the rural campus at Camden, a vital part of our Faculty for over 50 years. Veterinary and agricultural research at Camden has resulted in a number of world firsts, and the teaching hospital, the University Veterinary Centre Camden (UVCC), with its Equine Performance Laboratory has received international acclaim.

Recognising the importance of Camden, the Faculty has been striving to improve its facilities: currently some \$13 million investment in teaching, research and UVCC facilities is planned. This includes the Wildlife Health and Conservation Centre (WHCC) with its new Director recruited from the US, Associate Professor David Phalen. The WHCC and extensive teaching facilities housing the planned expansion of Learning and Teaching activities have just been completed at a cost of \$5 million.

Funds of \$3.7 million have been secured for the next phase - a 250-seat Lecture Theatre and Conference Centre, located in the vicinity of the WHCC, new teaching and research

facilities, and Veterinary Bioscience Research, The Shute Building.

Exciting news for the UVCC is the support being provided by the University with more than \$4 million of state-of-the-art diagnostic imaging, surgical, medical and pathological equipment to be installed for large and small animals.

Our next goal is to seek much-needed support to develop Camden as a major campus for the University. The University restructure and implementation of shared services gives us, and the Plant Breeding Institute (FAFNR), a great opportunity to expand the horizons of Camden and achieve a truly unique rural centre for agricultural and veterinary bioscience research and education.

At Camden, we currently have over 170 staff, nearly 200 students, and a research income of over \$10 million pa in plant and veterinary biosciences, figures that are expected to increase significantly over the next few years. However, the current campus comprises 19 separate educational units with little coordination or central University support. We are submitting a strategic plan to the University asking for integrated and shared facilities on the campus to facilitate optimum growth and expansion of all of its activities. I believe the potential for Camden is enormous, with its wide range of rural activities and the opportunities to partner with other research and educational organisations.

For these reasons, I am optimistic the Faculty is on course for an "onward and upward" trajectory within the University of Sydney.



Professor Leo Jeffcott, Dean, Faculty of Veterinary Science.

KRISTEN CLARKE



because animals matter

The Veterinary Science Foundation of the University of Sydney is the promotional and fundraising arm of the Faculty of Veterinary Science.



KRISTEN CLARKE

Jacqueline Booth, Director, Veterinary Science Foundation.

contact us

Roundhouse is produced by the Veterinary Science Foundation of the University of Sydney. For further information, contact Jacqueline Booth, Director of the Foundation, on: Phone (02) 9351 8024 Fax (02) 9351 8025 email vsf@vetsci.usyd.edu.au www.vetsci.usyd.edu.au/Foundation

THE VETERINARY SCIENCE FOUNDATION HAS A NEW TEAM

Director Jacqueline Booth and Project Coordinator Georgina Springer.

Jacqueline is a highly experienced fundraiser – a critical skill given the increasing pressure on the Faculty to raise funds for a wide range of capital works and major projects. Jacqueline comes to the VSF after 13 years at Northcott, a long established not-for-profit that delivers a significant range of services to people with a disability. She also held senior positions in other not-for-profits including the Australian Red Cross and the Hunger Project.

At Northcott, Jacqueline was General Manager Marketing and Manager Fundraising. She delivered major outcomes on both fronts, developing and expanding the Society's fundraising and promotional programs and raising the profile of the organisation.

Jacqueline loves the challenge and rewards of fundraising, and is particularly committed to developing special relationships with donors. She led Northcott's fundraising team to its best year ever in 2005, raising almost \$4 million. She was 2002 winner of the BPW Women in Business Accomplishment Award, and a finalist in the Sydney Business Review's 2002 Business Women of the Year.

Jacqueline is already passionate about the VSF and Faculty. "I am so impressed with Faculty staff and their

exciting and diverse projects. While the Dog Centre campaign is our current target, I am looking forward to raising funds for the new wildlife centre and to the challenge of a major capital campaign to redevelop the Camden campus," said Jacqueline.

The new VSF team is off to a flying start - Project Coordinator Georgina Springer also worked at Northcott, holding the role of Special Projects Coordinator. She was involved in fundraising projects, donor development, sponsorship and special events. Georgina arrived at the VSF at the end of July, her past experience with major events coming to the fore as she took over the staging of the VSF's annual fundraising concert Animalia.

Previous VSF Director Dr Jennie Churchill held the role for more than 5 years. "I will miss the wonderful VSF supporters and our outstanding Faculty staff, but having been personally involved in recruiting and handing over to the new team, I am already incredibly impressed. Jacqueline and Georgina will make a significant impact and I am delighted to know the VSF is in such skilled and enthusiastic hands," said Jennie.



KRISTEN CLARKE

Jacqueline Booth, new Director of the Veterinary Science Foundation.



KRISTEN CLARKE

VSF Project Coordinator Georgina Springer.



VSF AFRICAN ADVENTURE

Join the VSF on its third fundraising adventure with World Expeditions in June 2007! Following superb trips to Nepal and the Antarctic, Africa is our next exciting destination. From 11 to 29 June 2007, enjoy some of the world's best wildlife viewing in Tanzania, getting off the beaten track in the Serengeti, Tarangire, Lake Manyara and Ngorongoro Parks.

See insert or email vsf@vetsci.usyd.edu.au for more information.





The new Wildlife Health and Conservation Centre on the Camden campus, designed by Gordon & Valich Architects, will open in January 2007.

Architect's impression of WHCC (left) and teaching spaces (above). The Camden campus has long needed new teaching facilities (students attend lectures in temporary buildings). Investment of almost \$13 million, secured from federal government grants, the University of Sydney and the Faculty, means planning and construction of new facilities is underway. A new Flexible Teaching Space adjacent to the WHCC will provide a dry laboratory, computer room, and 2 spaces for small or large group teaching. And, in a first for Camden, an additional \$3.7 million has been allocated for a 250-seat Lecture Theatre and Conference Centre, construction to commence in 2008.

WILDLIFE HEALTH AND CONSERVATION CENTRE

A Centre focusing on the role of veterinarians in all aspects of conservation biology had long been the dream of the Faculty's Associate Professor Tony English.

That Centre – the Wildlife Health and Conservation Centre (WHCC) – is now a reality, with construction just completed on the Camden campus. Planning for the WHCC began when the Veterinary Science Foundation, with Associate Professor English, secured a \$2.2 million grant from the federal Sustainable Regions funding program. The University of Sydney has provided significant additional support, creating an Associate Professorship to lead the WHCC, and funds for Centre staff and initial operating costs.

Newly-appointed Director, Associate Professor David Phalen, is developing the Centre's strategic plan and direction. "I am calling this our mission, because the word implies a sense of passion and a sense that the work done by the WHCC is being done for the greater good of the environment, the animals within it, and the humans who share the environment with them," he said.

WHCC MISSION

WHCC objectives of research, teaching and wildlife clinical medicine aim to:

- provide referral and primary care to non-traditional pet species including birds, reptiles, ferrets, rabbits, rodents, fish and zoo animals
- work with local rehabilitation organisations to provide primary and referral care to injured and diseased wildlife

- use the WHCC clinical service, in combination with courses in the curriculum, to provide a foundation in wildlife and exotic animal medicine and conservation biology to veterinary students

- develop and facilitate wide ranging research programs using the diverse talents of Faculty of Veterinary Science staff and other Faculties at the University of Sydney, and to collaborate with other government and non-government national and international institutions that identify and seek to reduce threats to biodiversity

- continue ongoing research into the health issues of exotic pets

- provide postgraduate education at both the Masters and PhD level through the above programs

- actively engage and involve the community in the activities of the WHCC.

WHAT IS THE WHCC?

The most visible WHCC resource is the new veterinary clinic on the Faculty's Camden campus, designed to facilitate top quality medical and surgical care for wildlife and client-owned exotic pets. Scheduled to open in January 2007, it includes wet and dry dens and other caging customised for a wide range of species. The clinical service will initially be operated by the Director, a full time veterinarian, and a veterinary nurse, and the building provides office space for postgraduate and veterinary students. Specialised laboratory

facilities for bench top research are located in the adjacent Shute building.

TEACHING

With opportunities to train in the WHCC clinic, it is hoped that veterinary students at the University of Sydney will have access to one of the premier programs in this field in Australasia. Undergraduate veterinary students will begin practical rotations through the WHCC clinic by December 2007, and an internship or residency program is planned to commence in early 2008. Year 2 veterinary students already undertake a 4 credit course on veterinary conservation biology, and units relating to wildlife and exotic pets are included in anatomy, histology and medicine.

A Master's degree in Wildlife Health and Population Management, pioneered by Associate Professor Tony English and Professor Chris Dickman, is now in its sixth year and attracts an increasing number of students from around the world. Their research projects have already resulted in a number of important discoveries and publications.

RESEARCH AND LINKAGES

Dr Phalen emphasises the most important resource of the WHCC is Faculty staff: "There are more than twenty members of the Faculty of Veterinary Science who already have a strong involvement in conservation biology and wildlife research. This number increases dramatically if we include staff in other science faculties,

many of whom are already collaborating with veterinary science researchers."

The diverse wildlife-related projects already underway include molecular studies of the evolution of marsupials, work on the Tasmanian Devil facial tumour, infectious diseases of the koala, birds and fish, Australian sea lion mortality and other studies of marine mammals in the Antarctic, reptile phylogeny, and the impact of invasive species on native fauna. Many new projects are in the pipeline and Dr Phalen hopes they will ultimately include local Camden/Campbelltown programs such as restoration of the Nepean River.

A key strength of Faculty staff is their connection to other dynamic organisations. These include the Australian Wildlife Health Registry, Australian Wildlife Health Network, Taronga and Western Plains Zoos, Australian Marine Mammal Research Centre, the Australian Museum, Cooperative Research Centre for Invasive Animals, Wildlife Information and Rescue Service, National Parks and Wildlife Service, Botanic Gardens, the Blue Mountain World Heritage Institute, the Schubot Exotic Bird Health Centre at Texas A&M University, and the Australian veterinary community.

It is anticipated the WHCC will develop linkages with state and federal governments, and with regional, national and international conservation organisations and universities. Efforts are underway to establish linkages to

similar programs in New Zealand, Southeast Asia, the United States of America, South America, and Europe.

BIOSECURITY

Dr Phalen is continuing work begun at Texas A&M University relating to mycobacterial diseases of birds, avian herpesviruses, and *Macrorhabdus ornithogaster*. "I want to use my training to study diseases of captive birds that originated outside Australia and that may pose a threat to native Australian species. I am also eager to identify problems faced by Australian veterinarians working with exotic species that need additional research, and to ensure the WHCC becomes a conduit to aviculturalists and pet bird owners as well as veterinarians regarding avian influenza and other issues that may affect exotic pets," he said.

Associate Professor Phalen believes the Wildlife Health and Conservation Centre will reflect its members: "The WHCC will be a very inclusive organisation whose fundamental belief is that resources are too limited for competition and that conservation and health issues can only be resolved with collaborative initiatives," he said.

If you have an interest in the WHCC programs, please contact the Director at dphalen@camden.usyd.edu.au.

OUR NEW WHCC DIRECTOR

The Wildlife Health and Conservation Centre (WHCC) will be led by Associate Professor David Phalen DVM, PhD, Dipl. ABVP (Avian). Dr Phalen was appointed following an international search for a leading senior academic, wildlife specialist, researcher and teacher. He is also an experienced media presenter with an understanding of fundraising.

Dr Phalen graduated from the University of Chicago with a BA in Biology in 1979, followed by a DVM in Veterinary Medicine from Cornell University in 1983. He completed his PhD in Veterinary Microbiology at Texas A&M University in 1992, and in 1997 gained board certification with the American Board of Veterinary Practitioners as an Avian Specialist.

Dr Phalen brings significant clinical and research experience relevant to many exotic animal and bird species, from both private practice and



Director of the Wildlife Health and Conservation Centre, Associate Professor David Phalen.

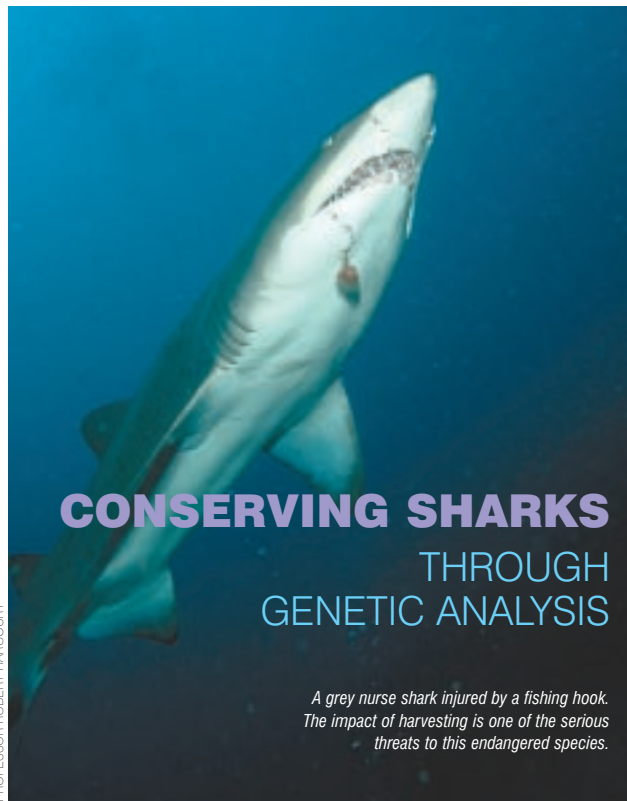
university centres. Since 1989 he has been located at Texas A&M University, commencing as a Veterinary Clinical Associate at the Schubot Exotic Bird Health Centre, Department of Pathobiology – he later became the Centre's Assistant Director. From 1993 Dr Phalen joined the Department of Large Animal Medicine and Surgery where he was part of a team that managed the day-to-day operations of the Zoological Medicine Clinical Service.

Prior to his arrival at Camden in June 2006, Dr Phalen already had a strong network across the Australian veterinary, zoo and scientific community. He has been an International Reviewer for Australian PhD students, presented papers at Australian conferences, and undertaken joint research projects with Australian scientists, including staff at the Faculty of Veterinary Science. He has published work on diseases of budgerigars, cockatiels and cockatoos.

One of the requirements for the role of WHCC Director was a proven research track record and

Associate Professor Phalen has enjoyed an extraordinarily accomplished research career, including some world firsts. His current research interest, to be continued at Camden, is the fungus *Macrorhabdus ornithogaster* (see page 4). His academic publications are extensive, he is co-author of the book *Pathology of Exotic Birds*, and has contributed chapters in many veterinary textbooks.

Dr Phalen has served on the editorial boards of prestigious specialist journals, including the *Journal of Avian Medicine and Surgery*. He is the recipient of many awards and honours, including an Association of Avian Veterinarians award for Outstanding Service and Commitment to Advancing and Promoting Avian Medicine and Stewardship, and an Excellence in Avian Research Award from the American Veterinary Medical Foundation. He also received awards from Bird Clubs of Virginia (Medical Research Progress to Benefit Aviculture) and the George Award from the National Parrot Rescue and Rehabilitation organisation.



CONSERVING SHARKS THROUGH GENETIC ANALYSIS

A grey nurse shark injured by a fishing hook. The impact of harvesting is one of the serious threats to this endangered species.

PROFESSOR ROBERT HARCOURT

Populations of many shark species are declining rapidly around the world. Their life history and ecological characteristics make many particularly vulnerable to anthropogenic impacts such as harvesting, and habitat degradation or loss.

Add to these environmental threats the almost non-existent knowledge of fundamental parameters such as population structuring, dispersal, and effective population size: unlike other wildlife species, data collection relying on direct observation can be logistically challenging in sharks. This has led to information gained through molecular methods becoming increasingly critical for conservation management.

Dr Kyall Zenger, ReproGen Research Fellow in the CRC for Innovative Dairy Products, also applies his genetic expertise to support wildlife conservation. Kyall is part of an international team using molecular methods to investigate shark and marine population biology. Core project partners include Dr Adam Stow, Associate Professor Robert Harcourt and Professor David Briscoe of Macquarie University, and Dr Victor Peddemors, University of KwaZulu-Natal, Durban, South Africa.

Kyall has developed genetic analysis tools for investigating the population dynamics and evolutionary genetics of numerous divergent shark species – tools already applied to the grey nurse shark (*Carcharias taurus*), a species listed as globally vulnerable by the World Conservation Union and critically endangered in eastern Australian waters (2004 population estimate was 500).

"We need both demographic and genetic knowledge to understand

declines in shark populations and to develop conservation management plans," said Kyall. "To help us assess the eastern Australian grey nurse shark's extinction risk, we studied its genetic diversity and the level of genetic isolation within Australian and South African populations."

The study showed eastern Australian populations have lower levels of genetic variation than western Australian and South African. It also confirmed Australian populations are isolated from South Africa and, significantly, experience negligible migration between east and west Australian coasts.

The group's findings have important implications for the viability of the eastern Australian population of grey nurse sharks. As numbers of this critically endangered species continue to decline and replenishment is unlikely through natural migration from other, more numerous populations, extinction is imminent for the grey nurse shark in eastern Australian waters without urgent conservation efforts.



Dr Kyall Zenger, Faculty Research Fellow and from 2007, Lecturer in Wildlife Genetics in the Faculty's Animal and Veterinary Bioscience degree.

Even the benign and gentle platypus has a sting in its tail. Fourth year agriculture student Camilla Whittington is part of a research project working to characterise genetic components of platypus venom. The project will study the evolutionary relationships of platypus venom genes with venom molecules found in other species such as snakes, lizards and sea anemones.

Camilla is working with Dr Kathy Belov in the Faculty's Australasian Wildlife Genomics Group. Project collaborators are Dr Wes Warren, Washington University Genome Sequencing Centre, and Professor Philip Kuchel, University of Sydney.

In early 2006, the platypus genome was sequenced for the first time at Washington University, and Dr Kathy Belov and team are involved in the annotation of this genome (*Roundhouse*, May 2006).

Both male and female platypus are born with hind leg spurs, but only the male develops the hollow keratinised structures connected by a duct to the venom gland in the thigh.



STING OF THE PLATYPUS

Spurs on the hind limbs of the male platypus are connected to venom glands. They can inflict serious damage on competing males.

RICHARD WHITTINGTON

The venom is produced in significant quantities during the breeding season, when the spurs appear to be used offensively and defensively to assert dominance over other males – rather than to immobilise prey. The male platypus wraps both hind legs around the victim, driving the spurs in repeatedly while injecting venom. In humans, envenomation causes immediate and acute pain and swelling which is usually unresponsive to first aid techniques and painkillers.

Some information is already known about the venom: in the 1990s, new protein

characterisation techniques showed it contained C-type natriuretic peptides, defensin-like peptides, nerve growth factors and some uncharacterised proteins.

Without easy access to platypus venom glands, Camilla is reconstructing the evolutionary history of the venom by first mining the newly-sequenced platypus genome to characterise the genes or gene families involved in venom production. Comparative genomics will compare these to the venom genes and endogenous protein genes in other species, and phylogenetic analysis will then exam the

evolutionary origins of the venom proteins.

As Camilla says: "It's very exciting to be working on an animal that is both unusual and that we know so little about. The important phylogenetic position of the platypus as an early offshoot from the mammalian lineage means this research has the potential to provide us with information about the evolutionary origins and functions of venom peptides as well as our own body proteins."



Year 4 agriculture student Camilla Whittington is studying the genetics of platypus venom.

KRISTEN CLARKE

PUTTING KOALAS BACK INTO THE TARLO

A number of years ago, the Billyrumbija Landcare group approached the University of Sydney with a proposal to reintroduce koalas back into the Tarlo River National Park in the Southern Tablelands. Koalas had not been sighted in the park for more than 40 years.

That project is now a reality. Melissa Farrelly, a biology graduate from Western Australia, is a full-time student in the Master of Applied Science (Wildlife Health and Population Management), a joint program of the Faculty of Veterinary Science and the School of Biological Sciences.

The project will pilot the translocation of a female and male koala from the Campbelltown area to the Tarlo River National Park in the hope the park will sustain future koala colonies. Project collaborators are Landcare and Associate Professor Rob Close of the University of Western Sydney. Dr Close and his team have monitored koalas in the Wedderburn area for more than 20 years.

Given the considerable ideal koala habitat still existing in and around the Tarlo, the reason for the presumed local extinction of koalas is unknown, but is likely a combination of land fragmentation, fire, the introduction of dogs and possible disease epidemics.

Koala populations near Tarlo River are small and fragmented, with little knowledge about their status, whereas the Campbelltown population is thriving with healthy females living to 15 years. This population is expanding, pushing some individuals into developed areas with increased risk from car accidents and dog attacks. The two koalas chosen will ideally come from risk areas and be young animals ready to disperse and find their own home range.

A suitable female – Flossie - is being tracked by radiotelemetry, and the team is looking for a male. Following translocation, Melissa will monitor the koalas, assessing their home range, health and adaptation to the new environment by recording information including tree species, GPS, behaviour and scats (droppings). The project will be reversed should the animals fail to thrive.

The pilot study aims to develop a successful translocation technique. Melissa says, "We hope it will, over time, create an 'insurance' population of koalas, lead us to unknown populations and help to increase awareness of koala conservation issues."



Wildlife Masters student Melissa Farrelly with Francesca, one of the koalas in the translocation pilot study.

KRISTEN CLARKE

THE AUSTRALIAN SEA LION A THREATENED SPECIES

A juvenile Australian sea lion at Seal Bay Conservation Park, Kangaroo Island.

RACHAEL GRAY

The Australian sea lion, *Neophoca cinerea*, the only pinniped endemic to Australian waters, is now listed as a Threatened species, Vulnerable category under the Environment Protection and Biodiversity Conservation Act of 1999. It currently breeds on the coast and at least 50 offshore islands from Western Australia to South Australia. A 1994 study estimated the population at 9,000 to 12,000 individuals.

A Faculty research project will soon contribute to the conservation and future management of the species. Dr Rachael Gray, with Professor Paul Canfield, is investigating the factors impacting on the recovery of the Australian sea lion from historical commercial harvesting and the

hopes to identify diseases involved in pup mortality, and build information on the general biology of the species.

Rachael, a Lecturer in Anatomy, has a background of Antarctic and marine mammal research. Her PhD focused on the health indices of leopard and Weddell seals, and she spent two field seasons at Davis Station in the Antarctic with the Australian Marine Mammal Research Centre, a joint Faculty and Taronga Zoo initiative.

This project will determine the current health and disease status of Australian sea lion pups. Sample collection is taking place in colonies in South Australia, including at Seal Bay Conservation Park on Kangaroo

species' current health status, including disease and its role in mortality. Sea lion pup deaths are high in some colonies. By establishing basic biological parameters, the study

Island. Pups are sampled when they are approximately 6-16 weeks old and weigh between 12-20kg. They are handled only when their mothers are away from the colony foraging to ensure minimal distress to both the pup and mum.

Sampling includes the collection of carcasses of recently-dead sea lions found in the colony for necropsy to determine cause of death. Other sampling includes internal (faecal flotation for gastrointestinal worms) and external parasite examination (lice and mites), body condition scoring, physical examination, and the collection of blood for haematology, biochemistry and microbiological investigations.

Rachael's study will provide reference values for future comparative health and disease investigations. She hopes the Australian sea lion pup study will extend to future studies in other age cohorts to determine the role of disease in the mortality of this unique Australian marine mammal.



Dr Rachael Gray

KRISTEN CLARKE

HELPING TO SOLVE THE TASSIE DEVIL RIDDLE

The Faculty is contributing to concerted national efforts aimed at understanding the infectious tumour that has devastated the Tasmanian Devil population, reducing numbers by 50% over the past 10 years.

Dr Kathy Belov and PhD students Hannah Siddle and Claire Sanderson, of the Faculty's Australasian Wildlife Genomics Group, are collaborating with Dr Stephen Pycroft and Ms Erin Noonan, Tasmanian Department of Primary Industries and Water, to undertake a genetic study of immunological recognition of the disease.

During a recent visit to Launceston Hannah saw first hand the impact of the disease. "Seeing affected animals motivated me. We need to understand why devils don't appear to mount an immune response to these tumours so populations can be managed and, hopefully, the disease controlled," she said.

The group's previous studies and Hannah's PhD project, characterising the major histocompatibility complex (MHC) genes of the tammar wallaby, have provided an important model and starting point (*Roundhouse, November 2005*). The MHC is a significant cluster of immune genes found in all vertebrates that plays a role in antigen recognition.

Tasmanian Devil Facial Tumour Disease (DFTD) is passed between devils through biting. Necrotic lesions develop around the mouth and face that ulcerate and eventually cause starvation. The disease has geographic boundaries: while it is decimating devil populations in eastern Tasmania, devils in



KRISTEN CLARKE

Dr Kathy Belov and PhD students Hannah Siddle and Claire Sanderson with Taz, the quirky toy raising funds for devil research: to find out more about Taz visit www.discovertasmania.com.au/home/index.cfm?SiteID=1050

northwest Tasmania remain disease-free. Are these devils 'immune' or yet to come into contact with the disease?

In early 2006 it was demonstrated that tumour cells taken from samples across Tasmania have an identical, vastly mutated, karyotype. An allograft theory of tumour transmission was proposed, meaning the tumour could be the result of an infectious cell line. The only other reported transmissible tumour is the canine venereal transmissible sarcoma (CVTS), which occurs in dogs and is passed during coitus.

The Faculty group has two genetic-based hypotheses as to why the spread of DFTD has been so rapid and devastating. The tumour may 'escape' the immune system by down-regulating (decreasing) MHC class II expression and modifying MHC class I expression – this is basically how the CVTS operates. Or, devil MHC lacks diversity at class I and class II loci, resulting in a failure to recognise the tumour as 'foreign'.

Hannah and Claire have constructed a cDNA library from the spleen of a devil, isolated MHC class I and MHC class II genes and begun further work, including designing gene specific primers. Their preliminary results will now enable them to apply for grants to further support this important research.



The devastating Tasmanian Devil Facial Tumour Disease. Credit: Hannah Bender courtesy of DPIW and ANU

MACRORHABDUS

IMPLICATIONS FOR AUSTRALIAN WILD BIRDS

Quick Stain of *Macrorhabdus ornithogaster*, showing multiple organisms in a scraping from a bird's stomach.



KRISTEN CLARKE

Associate Professor David Phalen (above), Director of the Wildlife Health and Conservation Centre, is a specialist avian veterinarian with a diverse research portfolio. One of his research projects, both since his arrival in Australia and at Texas A&M University, focuses on an organism previously known as Megabacteria.

Dr Phalen and his team have proven the organism is a fungus. They have re-named it *Macrorhabdus ornithogaster* (Greek for a long rod from bird stomachs), and, having been the first to successfully grow the organism, are in the process of developing new treatments for affected birds.

The research is important for several reasons. While the organism has regularly been described in pet birds and an effective treatment is yet to be developed, it has also been found in wild birds in Australia and must be considered a disease with potential wildlife implications.

There is controversy about whether *Macrorhabdus ornithogaster* is a pathogen that causes disease or whether it is a commensal. Most researchers agree that, in individual birds and in some collections, clinical signs arise that can be attributed to infection with the fungus.

The yeast, first described in canaries, has a wide host range and worldwide distribution. The prevalence of infection in budgerigar aviaries is high, and faecal shedding has shown the percentage of infected birds in aviaries where it is enzootic ranges from 27 to 64%. It is commonly found in parrotlets, cockatiels and lovebirds, and has been reported in ostriches, chickens and other poultry species.

In the budgerigar, acute disease manifests as anorexia, regurgitation, and death in 1 to 2 days. In the more common chronic form, death follows prolonged weight loss. While the disease is usually seen in middle-aged budgerigars, infection begins early and Dr Phalen has detected the organism in 12 day old nestlings.

Treatment is difficult and relatively unsuccessful and Dr Phalen's work to find an effective therapeutic agent for both individual birds and affected flocks is important. The specialised laboratory facilities of the new Wildlife Health and Conservation Centre have been designed to support this and other research that will ultimately benefit Australia's native species.



PORT MACQUARIE KOALA HOSPITAL

Postdoctoral Research Fellow and member of the Koala Infectious Disease Research Group (KIDReG), Dr Damien Higgins is one of the Faculty's experienced wildlife academics. A Master of Veterinary Studies in Wild Animal Medicine and Husbandry, his current focus is the koala and he travels between the Faculty and Port Macquarie Koala Hospital. He is part of a multidisciplinary team with a holistic approach to marsupial disease, in particular, the two most prevalent infectious diseases of koalas: chlamydiosis and cryptococcosis.

FINDING A LINK

BETWEEN WILD DOGS AND ABORTION IN CATTLE

Neosporosis is a major emerging protozoal reproductive disease of cattle worldwide – costs to the Australian dairy and beef cattle industry could be \$30 million per annum.

Neospora caninum, the causative agent, is a coccidian protozoan parasite. First described as causing fatal neurological disorders in dogs it has since emerged as a significant cause of abortion in cattle. The disease is thought to involve a canine-bovine life cycle – suggesting wild dogs are important – and some studies indicate infection may also be common in foxes or native wildlife such as possums.

THE ROLE OF GENETICS IN KOALA DISEASE

KIDReG is partnered and supported by the Koala Preservation Society of NSW (Port Macquarie Koala Hospital), Australian Koala Foundation, WIRES, Symbion Vetnostics, Pfizer Animal Health, Australian Research Council, and the Hermon Slade Foundation.

One aim of this project is to determine key immunological responses in koalas. "We need to understand how environmental factors imposed by humans predispose marsupials to disease - in this case, genetic change associated with habitat loss, fragmentation and a history of hunting and translocation", says Damien.

Many koala populations are fragmented and, in some cases, highly inbred. Inbreeding may affect the koala's immune system fitness by reducing diversity at the Major Histocompatibility Complex (MHC) - genes involved in recognising foreign antigens. The high prevalence of chlamydiosis and cryptococcosis in some koala populations, and observations of a weaker immune response in koalas, suggest that MHC Class II function could be critical in the susceptibility of koalas to these diseases. This research will further

characterise koala MHCII genes and test the hypothesis that low MHCII diversity impairs the immune system of the koala.



Dr Damien Higgins

The project is significant because it brings together for the first time susceptibility of koalas to disease (primarily chlamydiosis and cryptococcosis), habitat fragmentation and inbreeding via the central and measurable link of the immune system. Through knowledge of the impact of genotype, gene flow and habitat fragmentation on the koala immune system, it will provide important information on the viability and welfare of koala populations.

"On a national and international scale, this research will enable us to create a foundation for examining the impact of inbreeding and other anthropogenic factors on disease susceptibility of a wide range of native animal species, not just the koala," says Damien.

Jess King, PhD student and Bachelor of Animal and Veterinary Bioscience graduate, is working with Associate Professor Peter Windsor on an Invasive Animals CRC-funded project investigating the prevalence, life cycle and risk to cattle and wildlife of *Neospora caninum*.

The study aims to test the hypothesis of an association between prevalence of *N caninum* in wild dogs and native wildlife to its occurrence in cattle. Project collaborators include Professor John Ellis, University of Technology Sydney, Dr David Jenkins, Australian Hydatid Control and Epidemiology Program, and Dr Peter Fleming, Vertebrate Pest Research Unit, NSW Department of Primary Industry.

There are two modes of disease transmission. The primary form of infection is vertical transmission: infected female intermediate hosts (cattle) transfer *N caninum* tachyzoites to their foetus transplacentally during gestation. Horizontal transmission also occurs with definitive hosts becoming infected by eating infected cysts in cattle tissue. Dogs are the only known definitive host at this stage.

The study will first develop diagnostic capacity for the detection of *N caninum* in wild canids

and wildlife. Faecal, tissue and blood samples from target animals will be obtained from localities adjacent to cattle herds with known neosporosis reproductive problems to identify the prevalence and distribution of *N caninum* serovars in relevant wild dog and wildlife populations.



PhD student Jess King.

The project will provide the essential first steps in development of management strategies for Neosporosis where infected wildlife, wild dogs and cattle co-occur - information that is necessary to improve current knowledge of risk management and threats of wild canid and fox populations to domestic species.

CLOSE UP



STUDENT PROFILE
SATOKO KAWAJI

What are your qualifications?

I completed a Bachelor of Veterinary Science at Obihiro University Agricultural and Veterinary Medicine, Hokkaido, Japan in 2000. This was followed by a National Veterinary Registration Examination by the Ministry of Agriculture, Forestry and Fisheries of Japan to become a Doctor of Veterinary Medicine.

Tell us what led you to Australia and the University of Sydney

I always wanted to work with large animals, so after graduation I started working as a veterinarian at a public livestock animal health station. My duties were to conduct bacteriological tests to diagnose infectious diseases in livestock animals, and to give advice to clinical veterinarians and farmers. Through this role, I became more and more interested in infectious diseases and transferred to the National Institute of Animal Health (NIAH), Japan, to start research work. As I was particularly interested in Johne's disease, I began my first research project in this field. When I thought that I would like to continue studying and get a PhD degree, there were no universities focusing on Johne's disease in Japan. So I started searching ideal universities and supervisors worldwide and finally found my current supervisor, Professor Richard Whittington, and his working group in the Faculty of Veterinary Science at Sydney University. I then won an Endeavour Japan Award in 2006 from the federal Department of Education, Science and Training to help support my Australian studies.

Tell us about your research project

When I was in the NIAH in Japan, we developed a new diagnostic method for Bovine Johne's Disease (BJD) using real-time PCR. Now I am applying this method to sheep as the first study in my PhD course. So, my current study is "Detection of Mycobacterium avium subsp. paratuberculosis in Sheep Faeces by Direct Quantitative PCR". I am also interested in the survival strategy of the bacteria during its dormant state and for my PhD I will analyse the pathogen under various environmental circumstances using genomic and proteomic techniques.

What are your plans after graduating?

I haven't decided yet. I may return to the same job at NIAH in Japan or I may remain in Australia.....or I may go somewhere else. However, I would like to continue research in the same field, and I believe in luck and fate taking me!

What do you do in your spare time?

The first month that I came here was a little bit tough, because I didn't have a car! Life on the Camden campus is very quiet without a car! But now I enjoy driving and traveling in Australia and I've already been to the Blue Mountains, South Coast, Melbourne, Canberra, Hunter Valley and Wagga Wagga.

Who inspires you and why?

My current supervisors and colleagues. They are so kind and friendly to accept this stranger who cannot speak English fluently. I'm learning a lot from them. Not only do they give me advanced knowledge and skills, they are also broadening my view of things.

MOTOR LATERALITY

DO DOGS KNOW THEIR LEFT PAW FROM THEIR RIGHT?

Senior Lecturer and welfare scientist Dr Paul McGreevy has worked with service dog organisations for more than 10 years, particularly the Guide Dogs NSW/ACT and the NSW Police Force. Their guest lectures support animal training and management teaching of veterinary students, and Dr McGreevy provides assistance such as health care workshops.

The only veterinary ethologist working in an Australian university, Paul has just won an Australian Research Council-funded grant to establish the significance of a dog's preferred use of left or right paws. This will increase efficiency in the selection and training of guide and police dogs. This is the first study of laterality in working dogs, and already it is the largest - Paul and his team have now tested more dogs than any other research group worldwide.

It is already confirmed that males are more likely to be left pawed than right, while



Senior Lecturer Dr Paul McGreevy with Wally.

females are the opposite: significant as both sexes are recruited for police and guide dog work. And, while it is accepted that a wide range of animals have a preferred side (implying modern species inherited brain lateralisation from a common ancestor), growing evidence links behavioural traits in animals with their handedness or 'laterality'.

For example, studies have linked canine anxiety (thunderstorm phobia) and lateralisation - if left-pawed dogs are consistently more fearful and suspicious, service dog providers may not recruit them to avoid wasting resources (training guide dogs costs around \$65,000 and approximately 50% fail to graduate). Similarly, aggression towards other dogs frequently causes failure in trainee guide dogs, and research has linked right-pawedness with aggression.

The project will test 90 trainee guide dogs and 45 trainee police dogs for temperament and laterality (100 times per dog) at 4-6 months of age, then 14 months, and at 18 months if dogs complete training. Repeat testing will determine if early laterality scores are durable over time, reflect temperament, and ultimately predict the trainability and working attributes of guide and police dogs.

Through DNA samples, the research will also investigate the genetic origins of the dog's foreleg motor preference, providing the first estimation of heritability of motor preference in dogs and an advance in canine behavioural genetics.

VIRBAC FUNDING ADVANCES IN DERMATOLOGY

In 2003 Virbac Australia proposed very generous funding of \$125,000 to support a Dermatology Resident in the Faculty of Veterinary Science.

Dr Tina Baxter is now in her third year of the Residency. She works at both Sydney and Camden teaching hospitals, gaining clinical experience in dermatology cases under the guidance of Specialist Veterinary Dermatologist, Dr Linda Vogelneust. Tina has completed a major research project on skin testing in horses, and is now working on a clinical trial on pyoderma in dogs.

The horse project involved skin testing 40 normal horses (similar to prick-testing in humans) with allergens known to cause atopic dermatitis in horses, small animals and

humans. Allergens included pollens, dust mites, insect particles and mould spores.

Tina determined the most appropriate concentrations of these allergens for skin testing in horses with allergies - a world first for all but insect allergens. "There was controversy over a suspected high incidence of 'false positives' through use of incorrect allergen concentration. My research clearly identified the most appropriate concentrations. We also skin tested the same horses over three seasons to check for seasonal variation - the first time this had been done," said Tina.

Tina's second research project is a clinical trial of 60 dogs investigating alternative treatments for pyoderma, a

common superficial bacterial skin infection in dogs. Pyoderma clinical lesions include marked itchiness, hair loss, scaling, redness, skin thickening and increased pigmentation. Effective treatment is vital, to relieve patient discomfort and allow the underlying causative diseases to manifest and be treated appropriately.

Dr Vogelneust emphasises the importance of Virbac's funding. "Tina's residency has only been possible due to the wonderful generosity of Virbac. Their support is enabling Tina to sit her specialist dermatology examinations, and is underpinning research that will help us treat common skin diseases in animals more effectively," said Linda.



Dr Tina Baxter is the Faculty's Virbac Dermatology Resident.



Tina Baxter's research involves skin testing horses with a range of allergens known to cause atopic dermatitis.



2004 and 2005 graduates contributed significantly to the Partner Practice Conference: (back, left to right) Richard Lam, Edwina Wilkes, James Carroll, Tania Selig; (front, left to right) John Waterhouse, Kerry Doolin, Amy Aspley-Davis, Georgia Knudsen, Anne Fawcett.

PROVET PARTNERS IN VETERINARY EDUCATION CONFERENCE

The 4th Provet Partners in Veterinary Education Conference, held in July, again attracted an excellent attendance from the Faculty's valued veterinary practitioner and industry partners. The Conference is a key part of the new curriculum and symbolises the importance of the partnership between the profession and the Faculty. The Faculty extends warm appreciation to Provet for its continuing generosity as the conference's naming rights sponsor.

The 2-day Conference aims to provide continuing education, feedback and networking opportunities for veterinary practices and other organisations involved in hosting University of Sydney final year veterinary students.

Highlights included a session by Dr Paul Heinrich, Pam McLean Cancer Communications Centre, outlining the different learning styles of individuals and their application to student supervision and practice.

Key presentations delivered by Faculty staff covered equine practice, ruminants, small animal medicine and surgery, reptiles, and clinical pathology. Practitioners leading continuing education sessions included Derek Major, Peter Alexander, Lindsay Hay and John Aspley-Davis.

Recent graduates shared their early experiences in practice and the valuable opportunities provided by Partner Practices during their Year 5 rotations. Final year students joined educational partners and Faculty staff in informative discussion sessions.

Dean Professor Leo Jeffcott presented the Faculty's first Educational Partner of the Year Award to Dr Magdoline Awad from the RSPCA Yagoona, acknowledging the RSPCA's outstanding commitment to veterinary undergraduate education.



FACULTY STAFF NEWS



KRISTEN CLARKE

Hannah Forsyth (above) is Sub Dean for Postgraduate Coursework and manages the Veterinary Public Health Management degree, recent winner of a Carrick Teaching Award.

The University of Sydney received 8 of the 2006 Carrick Teaching Awards – and 2 of these went to Veterinary Science. The Carricks are highly competitive national awards presented after an intensive selection process. Faculty winners are:

- **Hannah Forsyth, Dr Jenny-Ann Toribio, Professor Richard Whittington** and **Meg Vost** for an innovative, holistic curriculum and learning environment for relevant postgraduate education in Veterinary Public Health

- **Associate Professor Jennie Hodgson** and **Dr Jacqui Norris** for an innovative, clinically-applied Veterinary Microbiology course that provides constructive and collegial learning environments for developing evidence-based, critical thinking skills in undergraduates.

Associate Professor Tony English has been awarded a Member (AM) in the General Division in the 2006 Queen's Birthday for services to veterinary science in the field of wildlife health and conservation through research, education and professional organisations (story page 8).

Research Fellow in the CRC for Innovative Dairy Products, **Dr Kyall Zenger**, received 1st prize for his poster 'Genome-wide SNP analyses of Holstein Friesian cattle reveal new insights into Australian and global population variability' at the 30th International Conference on Animal Genetics in Porto Seguro, Brazil.

Dr Kate Bosward, Dr Mark Krockenberger, Gerard Marcus and **Federico Costa** have won a Pearson Education UniServe Science Teaching Award for Innovations in Veterinary Pathology Learning and Teaching, particularly for eLearning activities that enhance the student learning experience and improve learning outcomes.

Dr Damien Higgins has won the Barry Munday Achievement Award, given by the Wildlife Diseases Association to recognise individuals who have made an outstanding contribution to wildlife health in Australia over the past five years.

New academic staff appointments include Lecturer in Veterinary Pathology **Dr Derek Spielman, Dr Kendra Davis**, Research Fellow Innovations Module, Postdoctoral Fellow **Dr Marta Jover**, and Research Fellow **Dr Anne Lehnert**.

Dr Pietro Celi, Lecturer in Ruminant Production and Health and Sub Dean for Animal Husbandry, has received the Young Scientist's Award for Best Short Communication by a scientist under 35 at the 2006 ASAP (Australian Society of Animal Production) Conference.

Dr Robert Dixon, Sub Dean for Animal Welfare, has been appointed a Visiting Professor in Animal Welfare Education at Shanxi Agriculture University, China.

Dr Jorgen Agerholm, a world authority on the pathology of genetic diseases of cattle from the Royal Veterinary University at Copenhagen, is visiting the Faculty on sabbatical.

Dr Kathy Zhu received the Biannual Wiebe Visser International Dairy Nutrition Prize 2006 for her PhD and work as a research officer at the Faculty between 1999 and 2005.



Dr Sophie Constable (left) with friend, Whisky the dog, Indigenous artist and Elder of the Yuendumu community Rosie Flemming, and Dr Roselyn Dixon (right).

HEALTHY DOGS HEALTHY COMMUNITIES

Dogs in Aboriginal and Torres Strait Islander communities are valued animals, providing companionship, protection and physical warmth. They can have a role in traditional hunting, and spiritual importance for many communities through 'dog dreaming'. They are also often left to fend for themselves, with dog health care occurring sporadically and only in a small number of communities.

Indigenous communities in the Northern Territory have expressed the desire for veterinarians to share their dog caring knowledge. A pilot project underway in Yuendumu in the Northern Territory - 'Healthy Dogs, Healthy Communities' – is exploring ways of bringing vets, health researchers, Elders and community members together to share dog caring information and effect long term change in dog health and welfare.

The multidisciplinary project team is led by Dr Robert Dixon, the Faculty's Subdean for Animal Welfare, Dr Roselyn Dixon, Lecturer in Special Education from the University of Wollongong, currently developing a best practice module for Indigenous education, and Dr Sophie Constable, a veterinarian who is completing a Masters at the University of Newcastle in Indigenous Education.

Education is important for dog health and welfare for people in any society, but the failure of past health-related programs has shown the educational paradigms of our dominant western culture are often culturally inappropriate for Indigenous Australians in remote communities. The Healthy Dogs, Healthy Communities project aims to develop an educational program through partnering Indigenous intra-community dog caring knowledge with extra-community experts in veterinary science, human and veterinary epidemiology, public health, environmental science, education and sociology. It will focus on cultural interpretation and relevancy and be tailored for each community in their language. It will also be evidence-based through monitoring the dog health programs and collecting data on dog disease and welfare.

The team believes Indigenous people have a deep understanding of the link between the health of the people and their animals to land management and spiritual health. The project will explore ways of sharing dog caring knowledge to create sustainable solutions for dog health issues in each community.

RURAL PUBLIC PRACTICE OF THE YEAR AWARD



Dr John McFarlane, District Veterinarian, Armidale Rural Lands Protection Board (RLPB), has been recognised for his outstanding contribution to the extramural program for final year veterinary interns.

John was presented with the Faculty of Veterinary Science 2006 Rural Public Practice of the Year Award at the District Veterinarians Association annual conference, held in September at Wagga Wagga. The award is based on the quality of intern experience, contribution to program administration, and delivery of exceptional outcomes.

John has enthusiastically hosted almost 20 students since the program began in 2004 and his interns have given consistently positive feedback. Dr McFarlane has contributed to the students' submission of high quality work for assessment, been ready and willing to accept interns at short notice and enabled the work of the interns to have significant impact on the local rural community through newsletters and media presentations. He involved his Board Directors in the Rural Public Practice program.

The program is receiving international recognition for its innovative promotion of veterinary public health 'in action' to final year interns, many of whom spend time at international, national and other public health agencies as well as NSW RLPBs. Interns frequently comment on the valuable exposure the program delivers to 'big picture' issues in veterinary science such as disease control policy, research and extension.

CLOSE UP



KRISTEN CLARKE

STAFF PROFILE IMKE TAMMEN

What are your qualifications and current position in the Faculty?

After completing school in Germany, I studied veterinary science at the Hannover School of Veterinary Medicine. This was followed by a Doctorate in the Institute of Animal Breeding and Genetics and 2 years postdoctoral research in animal genetics.

In 1997, I received a U2000 Postdoctoral Research Fellowship from the University of Sydney to work on inherited disorders in Australian sheep and cattle with Professors Herman Raadsma and Frank Nicholas of the Faculty's ReproGen. In 2002, I was appointed a Sesqui Lecturer in Animal Biotechnology. I completed a part-time Masters in Education (Higher Education) at the University of Sydney and was promoted to Senior Lecturer in 2006.

I have also undertaken various administrative roles and have been Sub Dean Camden from early 2006.

What do your various roles encompass?

I teach units of study in the Faculty's two degrees: veterinary science and animal and veterinary bioscience. My research activities focus on inherited disorders in livestock and I supervise postgraduate students in different aspects of animal genetics.

In my new role as Sub Dean Camden I facilitate communication between all stakeholders, assist in future planning for Camden and chair the Camden Advisory Committee, which addresses issues relevant to this campus.

As postgraduate coordinator I work to improve the postgraduate experience and help stage the annual postgraduate conference.

How did your career begin?

I grew up in Germany the daughter of a cattle veterinarian and granddaughter of dairy farmers - from the age of a three I knew that I wanted to be a vet. I ended up in animal genetics by accident as I was interested in the clinical characterisation of an emerging inherited disorder in cattle. I've never regretted this choice as it's a very exciting, inspiring and quickly-evolving field in science that eventually brought me to Australia and the Faculty of Veterinary Science.

What are your career highlights?

As I'm rather new to teaching my career highlights are linked to research: seeing my research on inherited disorders benefit the livestock industries and provide some hope for families with Batten Disease; and supervising excellent postgraduate students who do amazing work!

What do you look forward to in the future?

As someone who has enjoyed working for the last 9 years in Camden with extremely committed and motivated colleagues, continuation of the current upgrades and new infrastructure developments. And, improved integration between the 2 campuses to ensure a vibrant and sustainable Camden campus that is recognised as a crucial 'half' of our Faculty.

What do you do in your spare time?

I spoil my two dogs, enjoy the rare time horse riding and work together with my partner Terence on the house and garden.

Who or what inspires you and why?

Colleagues and students with a compassion for animals and humans and those that are motivated by the quest for knowledge.



with a bequest to animal health and welfare through the **Veterinary Science Foundation**

A bequest helps us support:

- world class veterinary education
- high quality care for all animals
- life-saving research and work to underpin Australia's livestock production industries
- rebuilding of our teaching hospitals into state-of-the-art facilities
- a new wildlife health and conservation centre

VSF A bequest helps us help animals

Veterinary Science Foundation
 Building B01, University of Sydney NSW 2006
 Tel: (02) 9351 8028 | Fax: (02) 9351 8025
 E-mail: vsf@vetsci.usyd.edu.au

www.vetsci.usyd.edu.au/Foundation
 All donations are tax deductible

DR JOHN COPLAND AO

Dr John Copland, well-known Research Program Manager for ACIAR (Australian Centre for International Agricultural Research), was awarded an Officer in the Order of Australia in the 2006 Australia Day Honours. Dr Copland received his award for services to veterinary science, particularly in the areas of veterinary parasitology and fish pathology, and the application of this research to agricultural programs in developing countries.



An alumnus of the Faculty of Veterinary Science, Dr Copland completed his PhD at the University of Sydney, and a Master of Science (Aquaculture) at the University of Stirling, United Kingdom.

Dr Copland has been responsible for establishing and driving major animal health and production projects in Australia and Asia. Prior to joining ACIAR in 1983, he spent 7 years in the livestock sector in Papua New Guinea (PNG), returning to Australia in 1976 to become Foundation Director of the North East Regional Veterinary Laboratory in Victoria. In 1980, he established the National Fish Health Reference Laboratory in Benalla, Victoria.

His numerous ACIAR projects have included successful rodent control programs in Southeast Asia, and developing a thermotolerant vaccine for Newcastle Disease for village and commercial poultry production systems, now widely adopted in Africa and Southeast Asia. Early in his career, he established the ACIAR fisheries program, with a major emphasis on the management of the giant clam, and management of coconut crabs and bait fish for South Pacific tuna fisheries.

Among his awards and honours are the PNG Independence Medal in 1976, the 1996 Kesteven Medal for International Animal Health Research and Development, and in September 2006, an Honorary Doctorate of Science from Universiti Putra Malaysia.

ASSOCIATE PROFESSOR TONY ENGLISH AM



Associate Professor Tony English AM has been awarded a Member (AM) in the General Division in the 2006 Queen's Birthday honours, recognising his services to veterinary science in the field of wildlife health and conservation through research, education and professional organisations.

Dr English was the committed driver behind the inclusion of veterinary conservation biology into the Faculty's curriculum, and played a critical role in the realisation of the new Wildlife Health and Conservation Centre. He is President of the World Association of Wildlife Veterinarians, and was founding President of the Australian Association of Veterinary Conservation Biologists.

A 1966 graduate of the University of Queensland, Tony spent time in cattle practice before gaining his PhD in 1976 and joining the staff of the Faculty of Veterinary Science in Sydney.

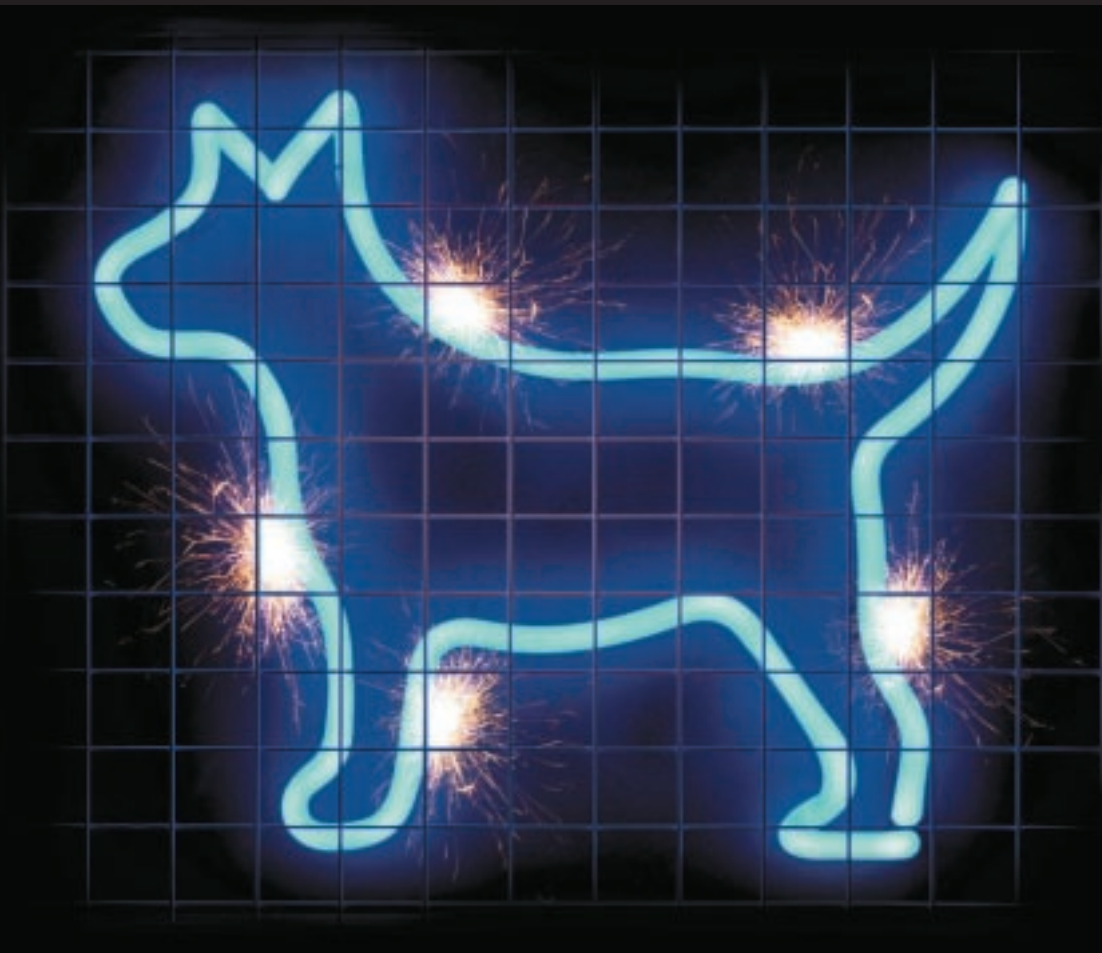
In the Faculty, he was responsible for cattle health and production teaching but also worked to develop a strong focus on wildlife. This included administering the Master of Veterinary Studies (Wildlife Medicine and Husbandry), a successful program that helped to train many of Australia's zoo veterinarians. Tony is co-Chair of the Master of Applied Science (Wildlife Health and Population Management) program, now in its sixth year. He continues his 30-year research record in cattle, deer and wildlife, and supervising postgraduate students.

Possibly best known as a deer veterinarian, Tony is a Fellow of the Australian College of Veterinary Scientists in the medicine and management of deer. He established the University's Deer Research Unit at Camden in 1979 and – in the direction his career would take – balanced a strong interest in the deer farming industry with an involvement in the conservation and management of Australia's wild deer populations.

Tony is a Ministerial appointment to the NSW Zoological Parks Board, sits on the Game Council of NSW, and recently retired from the Board of the Blue Mountains World Heritage Institute. He is a member of the federal Australian Animal Welfare Strategy's Wild Animal Working Group.

In 2000, Tony retired a Colonel after 38 years in the Army Reserve. In 1998 he combined his military and veterinary careers in the ATSIC-Army Community Assistance Program, with the development and delivery of dog health and population control programs in remote Aboriginal communities. This led to him co-founding the federally-funded Animal Management in Rural and Remote Indigenous Communities.

Tony retired from full-time employment in December 2005, but continues to contribute with a 4 year appointment as Honorary Associate Professor.



NEW ADVANTIX FOR DOGS. ZAPS TICKS AND FLEAS.

Protecting your dog from killers like paralysis ticks and parasites like fleas isn't easy. For years there have been no major advances in treatment. Leaving you with little choice.

New Advantix changes all that. Applied to your dog's skin, its unique formulation repels and kills ticks, and kills fleas. It also repels and kills mosquitoes and sand flies.

So don't risk your dog's health with products you no longer trust. Ask your vet for Advantix for dogs. And zap ticks, fleas and other biting insects with the latest technology.



Advantix® is a registered trademark of Bayer A.G. Leverkusen Germany BAY1275

