ROUNDHOUSE

Newsletter of the
Veterinary Science
Foundation at the
University of Sydney
Issue 9 November 2003

VSF
because
animals
matter

ROUNDHOUSE

GORDON AND VALICH

Architect's impression of the Valentine Charlton Cat Centre and new public entrance to the University Veterinary Centre at Sydney. The Cat Centre will be a completely new state-of-the-art hospital for feline medicine and surgery and is part of Stage 1 of the redevelopment of the University Veterinary Centre, the Faculty's small animal clinic and teaching hospital.

CONTENTS
ISSUE 9 NOVEMBER 2003

KRISTEN CLARKE

Maintaining MOMENTUM

Associate Professor Paul Canfield,
Acting Dean, Faculty of Veterinary Science

September 2003 saw the departure of our former Dean, Reuben Rose. His contribution to the Faculty's survival and growth has been monumental. He became Dean at a time of great need when the Faculty required fresh ideas and a change in direction. Reuben provided that innovative approach and was a catalyst for change. It is difficult to mention all of his achievements for the Faculty, but some key areas need to be outlined. Reuben was visionary in looking outwards for support and advice. He strategically involved the veterinary profession, animal industries and the broader corporate sector in forward planning for the Faculty. This was very much a listening process, but with defined actions as outcomes, and key strategic partnerships have been formed as a result: for example, in farm animal health and production research. Reuben was also instrumental in revitalising the Veterinary Science Foundation. He saw the need for looking elsewhere for financial support rather than relying on traditional and ever-dwindling government funding and, supported by its Executive Committee and friends of the Faculty from the corporate world, the Veterinary Science Foundation has become a most successful fundraising arm.

Reuben's contribution to the introduction of the new curriculum was pivotal. He saw a need for change in the way we did our core business and as a result, the new curriculum is now in its fourth year with the challenging final year to be introduced in 2004. Support from the veterinary profession will be fundamental to its success. The last key area on which Reuben impacted – and perhaps the most important of all – was that of transforming the culture of the Faculty. He was a great believer in engaging all staff within the Faculty in new initiatives, by providing them with skills and responsibility.

Enhanced communication and staff development, especially in the area of leadership, has moved the Faculty significantly along the path towards a culture of collective leadership.

These are the legacies left by Professor Reuben Rose as he worked to provide a platform for success and growth. However, it is business as usual for the Faculty as challenges remain and many of these initiatives still need to be embedded. We are blessed with a wonderful team of people and an outstanding student body, but we recognise that we still need strong support from the veterinary profession and animal industries to assist us in achieving our goals. To this end we shall continue to look outwards and listen.

On the 2nd of October, the Faculty began its new strategic planning process. Faculty members were joined in discussion by key University personnel, and external representatives from the animal industries and veterinary profession. The process was one of open and honest communication, especially in relation to expectations and needs related to undergraduate and postgraduate education, research, veterinary teaching hospitals and our financial sustainability. I believe the day was a successful initiation to the current planning process, and it will be built on in the coming year.

While we embed ongoing initiatives, there is still a need for the Faculty to embrace new strategic opportunities. One such example is the proposed Wildlife Health and Conservation Centre at Camden. Through the efforts of Jennie Churchill, Director of the Veterinary Science Foundation, and Associate Professor Tony English, significant government funding has been raised, providing the Faculty with a challenge and an enormous opportunity to develop a significant centre for education and research.

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

KRISTEN CLARKE

Dr Jennie Churchill, Director, Veterinary Science Foundation

contact us

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VSF wins funding for Wildlife Centre

JENNIE CHURCHILL

The proposed Wildlife Health and Conservation Centre at Camden will be a focus for a rage of initiatives, including undergraduate, postgraduate and community education, the care of sick and injured native animals, and research.

The Veterinary Science Foundation, working with Associate Professor Tony English, has secured $2.1 million from the federal government's Campbelltown-Camden Sustainable Regions Program to establish a Wildlife Health and Conservation Centre on the Camden campus. The funding will be formally announced in early 2004 at a joint press conference with Deputy Prime Minister and Minister for Transport and Regional Services the Hon John Anderson MP, local Macarthur MP Pat Farmer, and key University of Sydney staff.

The multifaceted Centre will be unique in Australia, enabling the Faculty to take a leadership role in wildlife issues. It will provide clinical care for native fauna, knowledge of the practical aspects of wildlife medicine for veterinary science students, tertiary education, vocational training for wildlife professionals and community carers, and a focus for wildlife research and consultation to government and industry.

The University of Sydney is providing significant support for this major project through the provision of buildings on the Camden campus.

Australia's Biggest Dog Wash

Sydney Olympic Park was the scene for yet another record-breaking effort when twelve veterinary students washed an amazing 848 dogs in eight hours to break the Guinness World Record for dog washing, previously standing at 715 by a group from The Netherlands. The record attempt was staged as part of Sydney Olympic Park ALIVE!, the annual event that celebrates the start of the 2000 Olympic Games, and it achieved huge media coverage for the Veterinary Science Foundation.

More than 250 veterinary students and staff generously volunteered on the day, and senior veterinary students provided pet health checks to 600 dogs. Dr Harry Cooper and Channel Seven's Harry's Practice new presenter, alumnus Dr Chris Brown, gave their time to entertain the crowds, as did the Parramatta International Canine Sports Club, NSW Police Dogs, Dancing Dogs, and a wide range of different dog breeds.

The Foundation is enormously grateful to its generous and highly supportive event sponsors:

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Sydney Olympic Park Authority, Sydney Showground, the Royal Agricultural Society, Supercoat, Bayer, Virbac, the NSW AVA, and Dog's Life Magazine. Dr Ross Perry and Ms Sue White, RAS General Manager Agriculture, were our independent record attempt scrutineers, and the Foundation also received extraordinary support from our mobile dog wash operators, suppliers and merchandisers, and SOPA and RAS staff.

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Top: The world record attempt team after washing 848 dogs in eight hours - twelve very tired but happy veterinary students.

Above: Dr Harry Cooper with an admirer at Australia's Biggest Dog Wash.

WORLD EXPEDITIONS

This is your last chance! Only a few places remain in the 2004 World Expeditions trek to Nepal in March/April 2004 – don't miss out on this special opportunity to visit both Nepal's Annapurna Machapuchare trail and the Chitwan National Park. WE is generously donating $1,000 back to the VSF for every trek participant.
Visit www.vetsci.usyd.edu.au/Foundation, or call World Expeditions on 1300 720 000.

J D Stewart Address

Dr Graham Kelly, Executive Director and founder of Novogen Limited and a graduate of the Sydney University Faculties of Veterinary Science and Medicine, delivered the 2003 J D Stewart Address. His presentation outlined the ground-breaking research that started at the University of Sydney in the 1980s and led to the development of a drug that is now proving to have a significant benefit in cancer patients. See media release at: www.vetsci.usyd.edu.au/Foundation/media_news_view.php?mID=22.

Pfizer

Pfizer is funding an ultrasound teaching program conducted by Associate Professor John House, Director of the Bovine Clinical Practice at Camden. The funded equipment will enable veterinary students to gain proficiency in the use of the ultrasound, and short courses for practitioners may also be offered once the program is established.

GORDON AND VALICH

The Valentine Charlton Cat Centre - now under construction and the major focus of Stage 1 of the redevelopment of the University Veterinary Centre at Sydney.

VALENTINE CHARLTON CAT CENTRE
CONSTRUCTION UNDERWAY

A critical milestone has been reached with the commencement of Stage 1 of the complete redevelopment of the University Veterinary Centre at Sydney into a state-of-the-art small animal Teaching Hospital, clinic and referral centre. This is one of the Faculty's major initiatives, and the focus of the Veterinary Science Foundation's most important fundraising campaign.

The redevelopment of the forty-year old University Veterinary Centre at Sydney will encompass both totally new and renovated buildings, and the $3.7 million Stage 1 will see the construction of the world class Valentine Charlton Cat Centre on the site of the now-demolished old stable complex. This initial Stage will also include a new public entrance, pharmacy, dog hospital reception area, clinical tutorial and staff facilities, and new isolation rooms that will fulfill the needs of the American Veterinary Medical Association accreditation requirements. Construction of Stage 1 is expected to be completed in August 2004.

Funding the development

The Valentine Charlton Cat Centre has been made possible by a significant bequest through the Post Graduate Foundation in Veterinary Science. The University of Sydney is providing dollar for dollar funding, and the Veterinary Science Foundation's capital campaign committee has raised the remainder of the funds required for Stage 1.

In addition to the bequest from the estate of the late Valentine Charlton, the Foundation is very grateful for the significant donations received from private individuals and the veterinary industry. Major industry supporters include Provet, Hill's Pet Nutrition, Apex Laboratories and Novartis Animal Health.

We need YOUR help to build Stage 2

The Veterinary Science Foundation has already raised funds towards Stage 2, which will include refurbishment of the existing Veterinary Centre into a superb dog hospital to match the excellence of the Valentine Charlton Cat Centre.

The completion of Stage 2 is critical to the Faculty's bid to achieve American Veterinary Medical Association accreditation and for the contribution it will make to the education of future veterinarians and companion animal care. The Veterinary Science Foundation, together with a group of alumni donors, is now seeking contributions to the campaign from members of the profession, as well as the community and industry – with your help Stage 2 will become a reality. For further information, please contact Jennie Churchill on (02) 9351 8024 or jenniec@vetsci.usyd.edu.au

SYDNEY VETERINARY CENTRE DIRECTOR

KRISTEN CLARKE

Associate Professor Geraldine Hunt (above) has been appointed Director of the University Veterinary Centre Sydney (UVCS). Geraldine, Associate Professor of Small Animal Surgery, began her Faculty career as a Lecturer in Veterinary Anatomy before becoming Senior Lecturer and Head of Surgery in 1997.

She is a Fellow of the Australian College of Veterinary Scientists in Small Animal Surgery, was a Member of the College Board of Examiners from 1993, and Assistant Chief Examiner, Membership from 1997 to 1999.

Geraldine has an active research and clinical program in cardiovascular and thoracic diseases and reconstructive surgery of dogs and cats, and gives regular presentations to international scientific conferences. She has received a number of prestigious awards: in 1997, the Australian College of Veterinary Scientists Ian Clunies Ross Prize for contributions to veterinary research, and in 2001 the Australian Small Animal Veterinary Association Distinguished Scientific Contribution award.

Recent papers include cellophane banding for portosystemic shunts in 111 animals, a review of portosystemic shunts in 234 cases, migration of wooden skewers from the intestinal tract of dogs and a review of soft tissue sarcomas and mast cell tumours in dogs.

As Clinic Director, Geraldine hopes to achieve stability of leadership in the UVCS, develop programs for staff support and development and fine-tune policies and procedures to ensure quality of clinical service and student teaching. "I am also looking forward to helping the new academic medicine and surgery appointees develop their discipline areas, to building up the general clinical practice, and to supporting ongoing clinical research", she says.

NEW CURRICULUM COMES TO FRUITION

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Professor David Hodgson, Director of Clinical Teaching, is responsible for the implementation of the Faculty's new curriculum.

In 2000 the Faculty of Veterinary Science launched a new undergraduate curriculum. Many aspects of contemporary veterinary education have changed dramatically in the twenty-five years since the previous curriculum was implemented, and the new curriculum is the result of extensive consultation within and external to the Faculty. Substantial contributions have come from practitioners, practitioner representative bodies such as the AVA, educational consultants, and many individuals from veterinary schools around the world, particularly the United States and United Kingdom.

The new curriculum focuses significant attention on animal handling skills and an appreciation of the nuances of the key animal industries. Students participate in both intra- and extramural animal handling and must demonstrate competency in this area before advancing in the course. Physics and biology are no longer taught and are considered essential assumed knowledge for incoming students.

A new unit of study in years 1-3, Professional Practice, promotes students' awareness of the realities of practice. Students have the opportunity to visit practices, discuss various aspects of the practice with staff, and undertake a case study of business activities relevant to practice.

A significant change is the presentation of the majority of learning material in a case-based format. State-of-the-art teaching methods are employed, including significant computer-assisted learning, small group tutorials and workshops to support lectures and practical classes.

A major transformation has occurred in the final two (clinical) years of the curriculum. Students in fourth year participate in a formal period of intensive study of clinical processes relevant to the major species, attended by practising professionals. In first semester they study diseases of small companion animals on the Sydney campus. In second semester they move to the Camden campus to receive instruction in horses and production animals, including specific teaching units at the new dairy facilities at Corstorphine, the sheep reproduction unit, university farms and piggeries, and the Faculty equine unit.

Following conclusion of fourth year, students are considered veterinary interns and are afforded limited registration by the Veterinary Surgeon's Board, enabling them to undertake restricted acts of veterinary science under supervision of a registered veterinarian. Students are required to complete a unit of study, Preparation for Practice, designed to reinforce their knowledge and understanding of the responsibilities incumbent on a registered member of the profession.

Veterinary interns are then ready to undertake a lecture-free final year in which they must complete four rotations in the University's Veterinary Teaching Hospitals (Sydney and Camden), and a month each in a Rural Lands Protection Board, extramural small animal and extramural rural mixed practice. The remaining three rotations allow students to choose between a very broad range of approved elective rotations, including further experience in a general practice environment, referral or specialist practices, zoos or wildlife parks, animal sanctuaries, the RSPCA, research laboratories, and industry placements.

During 2003, the Faculty has undertaken a limited introduction of the new intra- and extramural training programs. Feedback has been largely positive with some teething problems and we are highly focused on correcting, and where possible anticipating, these problems to ensure this challenging task succeeds.

The year 2004 will finally see all years 1 to 5 participating in the new curriculum. All members of Faculty are aware that the success of this new program relies in great part on the commitment, goodwill and hard work of our Partner Practitioners. The Faculty extends warm thanks to our Partners for participating in what we are sure will result in the production of highly skilled, versatile graduates from the University of Sydney.

NEW STRENGTHS IN POULTRY SCIENCE

KRISTEN CLARKE

The Faculty's new Chair in Poultry Science, Professor Tom Scott (above), brings more than twenty-five years of research, teaching and industry experience to the role. His responsibilities include undergraduate and postgraduate teaching, research, directorship of the University of Sydney Poultry Research Foundation and the Faculty's poultry research unit, and coordination and chairing of the annual Australian Poultry Science Symposium.

The Chair in Poultry Science is a partnership initiative between the Faculty of Veterinary Science and the RIRDC Chicken Meat Program and Australian Egg Corporation Limited to invest in targeted poultry nutrition research and education, for the benefit of the poultry industry.

Professor Scott graduated in Poultry Science in Canada. He gained his PhD at the University of Sydney in 1987, returning 18 months later to undertake a research project funded by the NSW Egg Corporation that demanded extensive industry liaison. He returned to Canada as a Research Scientist in Poultry for Agriculture and Agri-Food Canada, undertaking wide-ranging research in the Canadian Federal Agriculture Research Branch to improve the efficiency and sustainability of the Canadian poultry industry. He has published numerous scientific papers and held the role of Associate Editor of the Canadian Journal of Animal Science and advisor to the International Journal of Poultry Science.

Professor Scott is supported by academic staff with both teaching and research responsibilities: Dr Wendy Muir, Lecturer in Poultry Science, whose research includes projects with the new Poultry CRC; Research Associates Drs Jeff Downing and Ron Newman; and Honorary Associate Dr Peter Selle.

BOOSTING YIELDS FOR INDIAN DAIRY FARMERS

A joint project of the Faculty of Veterinary Science and the National Dairy Development Board of India (NDDB) has the potential to boost the economic and social situation of India's 11 million dairy farming families. India may be the world's largest milk-producing nation, with more than 300 million dairy cows producing 84 million tonnes of milk per year, but the milk is largely produced by small village dairy farmers owning only 1-3 head of cattle or buffalo, and most of these animals are on a straw-based diet receiving inadequate levels of key nutrients such as protein and fat. The result is a low average daily milk yield of 4-5 litres per cow or buffalo per day.

The project is focused on reversing low productivity through improved nutrition for dairy herds – specifically through value adding to by-product protein meals and cakes to provide increased levels of essential amino acids and energy.

Principal Research Fellow Dr Suresh Gulati, with colleagues Dr Trevor Scott and Mr Ken Bedding, brought the project to the Faculty following the closure of the CSIRO's Ian Clunies Ross Laboratory. It is funded by the Australian Centre for International Agricultural Research (ACIAR).

The project team has developed a process that increases the nutritional effectiveness of by-products such as sunflower, ground-nut and rape-seed meals (left over after oil extraction) by processing them to enhance the bioavailability of essential amino acids. Without processing, about 70% of the by-product protein is degraded in the cow's rumen and any benefits to the cow are lost. Now the processed by-products largely by-pass the rumen, enabling nutrients such as essential amino acids to enter the small intestine and be absorbed into the bloodstream, effectively boosting milk production.

Feeding trials have demonstrated an increase in yield of around one litre of milk per animal daily, and also of milk fat and protein. Dr Gulati says, "This is genuinely significant for village dairy farmers who are paid according to the yield of fat in the milk they contribute to their village cooperative. Any increase in their low incomes means better nutrition for their cattle and a better standard of living for their families."

A semi-commercial prototype unit that produces 50 tonnes of optimally protected protein supplement per day is already operating at Itola, in the Gujarat state of India. Further trials are underway, managed by the Faculty and the NDDB, in different regions in India. If successful, more commercial plants will be set up to produce the feed supplement in collaboration with local industry and dairy cooperatives.

As Dr Gulati says, "We have the technology, and now our challenge is to get that technology operating effectively at village level."

NATIONAL DAIRY DEVELOPMENT BOARD

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Right: Principal Research Fellow Dr Suresh Gulati.

Left: Indian women dairy farmers carrying milk to their local milk cooperative.

Below: The queue outside a milk cooperative where farmers have the fat and volume of their milk measured for payment.

SURESH GULATI

MANAGING MILK FEVER THROUGH NUTRITION

Can managing what cows eat effect a reduction in the incidence of milk fever? This is the subject of two research projects led by Senior Lecturer in Ruminant Production, Dr David McNeill.

The first, funded by Roche Vitamins Limited with support from Dairy Australia, involves assessing the effectiveness of vitamins aimed at priming the cow's hormonal status so her hormones can prepare for the expected hypocalcaemia at calving. The key vitamin, 25OH-Vitamin D3, is only now available in commercial quantities that make possible its inclusion as a feed supplement in the last few days before calving.

One potential cause of milk fever is the inability of the body to synthesise cholecalciferol, the key calcium homeostasis hormone, fast enough in response to the drain on plasma calcium as lactation starts. David and the team members - Professor David Fraser, Dr Michelle Hyde, Cathy Stimson and Amy Wilson - aim to help cows produce an adequate quantity of cholecalciferol before calving.

25-OH-Vitamin D3 is the direct precursor of cholecalciferol. Previously it could only be administered by injection - risky as incorrect dosage can be toxic and paradoxically lead to milk fever.

The team has established that the oral dose is readily and predictably absorbed into the blood stream, and determined an appropriate dosage that elevates plasma concentrations of 25OH to target levels for at least nine days – giving the cow time to beat the danger period of the few days either side of calving.

The next step is to demonstrate that the feed supplement effectively improves the rate of synthesis of cholecalciferol in pre-calving cows.

The second project is focused on feeding to improve bone health at calving. The expectation is that cows with healthier bones, the major reservoir of calcium in the cow, will cope more effectively with a hypocalcaemic episode at calving by being better able to supply extra calcium to the blood stream when demanded by hormonal changes at calving.

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Above: Dr David McNeill, Senior Lecturer in Ruminant Production.

Below: Two research projects in the Faculty are aimed at reducing the incidence of milk fever in cows – and the need for this traditional treatment with intravenous calcium solutions.

The project team – Drs David McNeill and Michelle Hyde, Professor David Fraser, Marie Bhanugopan and Anna Rankin – is testing the hypothesis that the key to improving bone health is to feed cows a high potassium diet for several months up to a few weeks before calving. Importantly, the treatment is stopped for the last two weeks of gestation as excess diet potassium at this time can induce milk fever. The theory being tested is that a high intake of potassium creates a mild metabolic alkalosis which in turn promotes bone accretion. There is already good evidence that this is the case in humans.

It's accepted that a diet high in calcium, phosphorus and magnesium is essential for building healthier bones, but the potential value of potassium has been ignored. Through this research, funded by Dairy Australia and Canpotex/Agrow Australia, it is hoped to show the value of potassium in improving the ability of the cow to direct more of its dietary Ca, P, and Mg toward bone replenishment.

Contact Dr David McNeill on d.mcneill@camden.usyd.edu.au.

ACHIEVING PROFIT FROM PIGS IN THE PHILIPPINES

Dr Jenny-Ann Toribio, the Faculty's Lecturer in Epidemiology, has a longstanding relationship with the Philippines in her role as consulting specialist to the Leyte Livestock Improvement Program (LLIP), a project focused on smallholder families raising pigs on the Filipino island of Leyte.

Funded by the Australian Centre for International Agricultural Research (ACIAR), the program aims to help farmers continuously improve their pig production systems to achieve measurable and sustainable improvements in areas such as profit (gross margin), the environment and energy efficiency, and to enhance the well-being of the farmers and their families.

The objective is to increase profit from pig raising by a minimum of 5% for all LLIP farmers, the key focus being profit rather than production. Farmers are trained to calculate gross margin, to understand nutrition and the importance of protein and energy levels, to build capacity through animal husbandry procedures (castration, vaccination, iron administration, and construction of heated creep areas) and to evaluate the impact of husbandry and marketing practices on profit.

Sows owned by smallholder farmers in Leyte in the Philippines. Most pig farmers own only one to two animals.

The LLIP researchers work closely with farmer teams that are actively involved in defining the direction for project activities. Jenny-Ann designs data collection and analysis, and helps the farmers understand their pig production system, how to evaluate alternate management practices and to benchmark key performance indicators – her data enables reporting on marketing and husbandry management practices achieving the greatest increases in profit.

Two Year 5 students, Leanne Clark and Bethany Jackson, provided a fresh perspective when they spent a month of their final year extramural elective placement at Leyte State University working with researchers and farmers on the LLIP project.

"It was a fascinating experience, seeing how animal health and production concepts from large scale practices need to be modified to be useful to small scale, backyard piggeries", says Bethany. "It highlighted the importance of understanding basic principles as these are often the most cost-effective and the most applicable to the setting in the Philippines."

Leanne agrees, "Our visit demonstrated the importance of understanding the economic as well as cultural needs of farmers before improvements can be made. We realised it was often impossible to transpose many advances in western pig production to a developing country like the Philippines without adequate training and support to ensure they are maintained."

Both Leanne and Bethany said the experience confirmed the need to gain a broad range of veterinary skills before working in a developing country. And the final bonus: the opportunity to spend time with the farmers, to get to know them on an individual level and understand their daily routine, and to try to learn the language.

SEEING THE WORLD

from the (modern) dog's point of view

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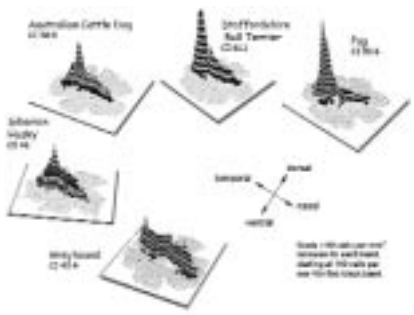
The short-nosed Pug (right) has been shown to have a smaller eye radius and more centrally-focused, forward vision than the larger, long-nosed Afghan Hound (above).



Ganglion cell distribution in five retinae from different dog breeds, varying from a strong horizontal visual streak in the greyhound to a very weak streak with a strong area centralis in the pug.

Dogs and wolves are virtually indistinguishable genetically – the domestic dog, *Canis lupus familiaris*, is a proven subspecies of the gray wolf, *Canis lupus*, and the two share almost identical mitochondrial DNA (the variation in DNA sequence is only 0.2%: compare this to 4% between the wolf and its closest wild relative the coyote).

This makes the enormous physical variation in the dog, the most diverse species on earth, even more remarkable. The adult dog weighs between 1.2 and 90kg, the wolf around 45kg. Skull length in the adult dog varies from 7 to 28cm, the wolf skull is around 30cm long.

Given this striking variation and the changes produced in dog skulls from the process of domestication and breeding, the Faculty's Dr Paul McGreevy, Senior Lecturer in Animal Behaviour, veterinary student (and medical graduate) Dr Tanya Grassi, and Dr Alison Harman from the University of Western Australia School of Psychology, undertook a study to explore relationships between eye anatomy, position and dimensions, and skull size in dogs. They asked the question – are eye size and retinal cell numbers and distribution in the dog as varied as canine skull characteristics?

Contrary to much of the literature, the study found a definite correlation between eye radius and skull dimensions – basically, large dogs have large eyes. Eye radius measurements ranged from 9.6 to 11.6mm, and the longer and wider the skull the larger the eye. Shorter skulls were also found to have more frontally placed eyes.

Most surprising was the strong correlation found between the distribution of retinal ganglion cells and nose length in the dog. In dolichocephalic breeds such as greyhounds, the cells are found in a horizontally aligned visual streak of fairly even density across the retina, while in brachycephalic breeds such as the pug, they are concentrated in a strong area centralis with virtually no streak. Retinal ganglion cells are the relay points from the eye's rods and cones, and their axons form the optic nerve - the variation in density within a single species is quite unique.

It seems the genetic manipulation of selective breeding, which has produced an abnormal shortening of the skull and forward placed eyelids, has also produced a more pronounced area centralis in short-nosed dogs. This means their sight is rather like that of humans, with good visual acuity in the centre of the visual field. In long-nosed dogs, the horizontal visual streak means that their peripheral vision is excellent but their central vision is weaker.

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Funded by a National Health and Medical Research Council, Australia Program Grant, the study explains why all sight hounds have long noses but it also led these researchers to ask why, during the past few thousand years, have humans repeatedly bred dogs with a short face and more frontally placed eyes? Does the shorter nose give them a more human-like appearance, or does it produce behavioural changes so these breeds are less likely to act like a running predator hunting in packs and more likely to focus on human faces using their area centralis?

Further studies have the potential to explore whether the same trends occurs in other species.

FOCUS ON FISH

National leadership in teaching and research focused on aquatic animal health is now on the Faculty's agenda. Professor Richard Whittington, the Faculty's Chair of Farm Animal Health, says, "The Faculty is working on a proposal for a vertically integrated unit of study in aquatic animal health to become part of the animal health and production curriculum from Years 1 to 5. We are already connected to the aquatic industry through national and international funding of research projects and we have increasing interest from potential postgraduate students – I hope this will become an excellent model of research informing teaching."

One of the historic factors behind the Faculty's commitment to aquatic animal health is a highly virulent disease of fish and the internationally-recognised role the Faculty is playing in its epidemiology and diagnosis.

Australia is unlucky to be home to one of the five internationally notifiable viral diseases of finfish, epizootic haematopoietic necrosis virus (EHNV). It was the first virus isolated from fish in Australia (1986) and its extreme virulence, lack of host specificity, restricted geographic range, lack of an effective treatment and high socioeconomic cost of disease outbreaks, have led to a joint hosting by the Faculty of Veterinary Science and the CSIRO Australian Animal Health Laboratory of the International Reference Laboratory for EHNV.

The laboratory provides research and a diagnostic referral service to the Australian industry, and ensures international diagnostic capabilities by providing technical advice, protocols and reagents to laboratories worldwide – a requirement of international guidelines in trade in aquatic animal products, administered by the Fish Diseases Commission of the Office International des Epizooties (OIE).

Through the Reference Laboratory the Faculty has won funding from the federal Fisheries Research and Development Corporation's Aquatic Animal Health Subprogram to replenish and upgrade the Laboratory's ageing stocks of reagents critical to the diagnosis of important aquatic diseases such as EHNV, and to create quality-controlled reagents for newly developed protocols based on, for example, molecular biology.

Richard says diseases such as EHNV present real challenges to both commercial fisheries and to the management of ecosystems worldwide, and further research is critical to determine the role of legal and illegal trade in food fish, ornamental fish, reptiles and amphibians in the spread of this and other aquatic viruses. He aims to ensure the Faculty participates in this research: "Through its key role in the OIE's Reference Laboratory and a commitment to teaching aquatic animal health, the Faculty has the opportunity to make an increasing contribution to an often over-looked discipline within veterinary science."

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Technical Officer Kylie Deece (above) is working on the Faculty's EHNV International Reference Laboratory project. In 2001, Kylie was awarded the Northern Territory Agriculture, Fisheries and Forestry Australia (AFFA) Science Awards for Young People, for the development of a PCR assay to detect Eperythrozoon suis in pigs in Northern Australia.

SPOTS THAT ARE HOT

One of the most easily-recognised but frustrating skin diseases in dogs is the "hotspot", or canine pyotraumatic dermatitis – an acute, painful, erosive, inflammatory skin disease, associated with repeated biting or scratching of a localised area of skin.

The disease is common worldwide, but there have been no published studies evaluating the disease in this country. Veterinary dermatologist Dr Linda Vogelnest, Professor David Hodgson, Dr Felicity Cole, and Masters student Marcel Vel, undertook a study based on information from 100 retrospective cases seen at the University Veterinary Centre in Sydney and via a national survey to over 500 small animal veterinarians, to evaluate predisposing factors, incidence and current treatment regimes used by practitioners.

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Above: A classic "hotspot" or canine pyotraumatic dermatitis. Right: Veterinary Dermatologist Dr Linda Vogelnest, is a Fellow of the Australian College of Veterinary Scientists, in Dermatology.

The study confirmed that canine pyotraumatic dermatitis is common in Australia, with over 80% of responding veterinary practices seeing more than 20 cases per year (median 41-60 cases). The lesions are most likely to appear on the tail, dorsum or hindlegs (48%) and the lateral face (31%). Two forms of disease are reported: the more typical superficial form, and a rarer deep form with associated bacterial folliculitis.

While age and sex do not appear to significantly predispose to disease, a major risk factor is breed. In Australia, Golden Retrievers head the list, with Labradors, Rottweilers, German Shepherds and cattle dogs also appearing to have increased risk. The breed type is closely associated with the haircoat. Thick, dense haircoats have increased hair shaft diameter and skin surface humidity, favouring surface micro-organisms. In the retrospective study, 33% of the 36 affected breeds had haircoats classified as thick or dense.

Climatic factors may also influence disease, with an increased incidence in the warmer months - 87% of cases presented to the Sydney University Veterinary Centres in summer, autumn, or spring. While there is no apparent effect of average maximal temperature, the study suggested a decreased risk in low rainfall and non-coastal regions, indicating humidity may be a key factor.

The pathogenesis of "hotspots" is incompletely understood, but often other underlying skin diseases are present, the most frequently cited being flea bite hypersensitivity. Despite this, reported treatments suggested concurrent flea control for management of "hotspots" is under utilised.

Practitioners in Australia employ a wide range of treatment protocols. More than 90% cleanse and clip the lesions and follow up with topical therapy. Determining and controlling underlying factors is considered important, as is distinguishing between the superficial and deep forms of "hotspot" to determine the need for antibiotic treatment. Although this is essential for the deep folliculitis form (Staphylococcus intermedius is the key bacteria), 82.2% of responding veterinarians use systemic antibiotics in all cases. More than 50% of responding practitioners use short acting glucocorticoid injections to control the typically severe pruritus and patient discomfort.

Hot spots remain a common and often frustrating disease, both for the patient and the veterinarian. The study showed that, despite much anecdotal reporting, further investigation is needed to clarify predisposing risk factors and determine an ideal treatment protocol.

CLOSE UP

KRISTEN CLARKE

STUDENT PROFILE
JUSTIN WIMPOLE

Was being a vet your chosen career?

I am one of the typical ones who always wanted to be a vet. What I didn't realise as a young boy is how many career options there are within veterinary science. I went to school in Melbourne and always thought I would go to university there. When I was offered a place at Sydney University on a Friday, I headed north the next Monday to secure the position and find somewhere to live.

Has the decision to study vet science been a good one?

I'm in my last month of the five-year course and it's definitely been a good decision. I have had the opportunity to do amazing things, meet remarkable people and go to interesting places. I really think we are a privileged profession.

What are you planning to do after graduation?

I've worked as an after hours emergency nurse at The Veterinary Specialist Centre at North Ryde the past year. This led to the offer of a one-year rotating internship starting in 2004. I will be spending time on a number of disciplines – internal medicine, surgery, emergency and critical care, neurology, anaesthesia and feline medicine. I think this will provide me with good initial training regardless of where I choose to go after this.

You obviously enjoy playing an active role in University life?

Yes, a university education is about much more than just study. I was President of the student Veterinary Society in 2002, and in the same year I was chosen to participate in the Cornell Leadership Program with vet students from around the world. At Cornell I spent ten weeks working on a research project and participated in many other program modules. I have also enjoyed Sydney University social events, including interfaculty sport. These are important in a close faculty like veterinary science.

What do you do in your spare time?

I love the beach, being active and enjoying good food and drink. I've been a competitive rower right through University, rowing eights and fours for both St Andrews College and the Sydney University Boat Club – the home of rowing. I have competed in four University Games as well as the Rawson Cup. I've also been the rowing coach at The Kings School for the past five years, coaching for the GPS Head of the River.

What are your thoughts on the new curriculum?

As a student in the last year of the old curriculum, I feel it has prepared me well and given me good base undergraduate education, especially in the basic sciences. Being in the transition year, I have also had a taste of the new curriculum through extramural rotations in veterinary practices. This was an invaluable experience and an opportunity to encounter things I may never see again. They are also a good opportunity to develop professional, technical and communication skills. It will be interesting in a few years to see any difference in graduates of the old and new curriculum.

REPROGEN

REPROGEN DISCOVERY
CREATES WORLDWIDE COMMERCIAL OPPORTUNITIES

A DNA test developed by Dr Julie Cavanagh during her PhD studies is now available worldwide through a commercial licensing agreement with DNA testing laboratories on all continents. This is the first time a ReproGen discovery has achieved full commercial application and, according to Centre Director Professor Herman Raadsma, it represents a significant milestone and performance indicator for ReproGen, the Faculty's Centre for Advanced Technologies in Animal Genetics and Reproduction.

Julie carried out her original research on the genetic disorder chondrodysplasia in Australian Dexter cattle (see Roundhouse May 2002, page 4: www.vetsci.usyd.edu.au/Foundation/newsletters.phtml).

The defect causes mutant, aborted chondrodysplastic foetuses or "bulldog" calves and is inherited in Dexter cattle in an incompletely dominant manner – that is, there are three different phenotypes: a homozygous normal animal (BB), a heterozygote (the "short-legged" Bb) and a homozygote, the "bulldog calf" (bb), normally aborted mid to late gestation.

Julie's research, funded by an Australian Research Council industry linkage grant, resulted in the discovery of the gene and the two mutations responsible for the genetic defect. She then developed a DNA test to discriminate between carriers and animals free from the defect.

Above: Dr Julie Cavanagh loading a DNA sequencer for molecular genetic analysis of cattle genes. Julie is now a postdoctoral student in the ReproGen team working in gene discovery in the Dairy CRC (Cooperative Research Centre).

The test is now licensed by ReproGen and the University of Sydney to five international DNA testing laboratories, enabling its use by all Dexter Associations around the world. For further information, email DNAtest@vetsci.usyd.edu.au.

undergraduate activities

Front left to right, Siobhan Mor and Sandra Barnard, and at rear Professor David Fraser and Kate Patterson.

Australian student wins 2003 Cornell Leadership Prize

Year 4 student Sandra Barnard has won the prestigious Cornell Leadership Program Prize for 2003. The College of Veterinary Medicine at Cornell University annually invites twenty-five veterinary students from around the world to an intensive experience of biomedical research and career counselling. Each has a research project with the expectation that significant new knowledge will be discovered during the ten-week program. The 2003 Program's Director said Sandra's prize reflected both her exceptional aptitude to biomedical research and her broad contribution to the Program's success.

Sandra was joined at Cornell by two other Sydney students, Kate Patterson and Siobhan Mor (both Year 5). All say the experience was challenging, had a major impact on their personal and professional skills, and created an awareness of the exciting opportunities available to them in research and related disciplines after graduation.

Sandra's research project was titled "Tracking herpesvirus egress in real time". Siobhan Mor worked on "Equine Herpesvirus-1 as a gene delivery vector", and Kate Patterson's project was "Expression of the N-terminal region of the SARS coronavirus spike protein".

Since its inception in 1991, forty-two Faculty students have won Cornell Leadership Program Fellowships, competing against highly talented veterinary students worldwide. More Sydney University students have been chosen than from any other university, including Cornell.

The impact of this extraordinary program is reflected in the careers of the thirty-two Sydney Cornell Fellows who have now graduated: four have won the University Medal and over half have enrolled for PhD or Masters degrees, both here and overseas. Sydney student Christine Hawke also won the Program Prize in 1992. She has just completed a PhD in immunology in the Centenary Institute in the Medical Faculty and is also working part time in the University Veterinary Centre at Sydney.

Sydney University Wildlife Society 2003 Conference

Sydney University Wildlife Society – a student run, non-profit group – staged a successful wildlife conference during September. Speakers, including Dr Larry Vogelnest (Head Veterinarian, Taronga Zoo), Dr Karrie Rose (Veterinary Pathologist, Taronga Zoo), Associate Professor Tony English and undergraduate and postgraduate students from the Faculty, covered topics as diverse as bear farming in China to the challenges of filming a platypus in its breeding burrow.

Dr Vogelnest had high praise for the student organisers: "They presented the conference in a very professional way. It's great to see so many students enthusiastic and excited about working with wildlife".

The Society, which gained accreditation with Sydney University Union this year, aims to bring wildlife and conservation issues to the attention of veterinary and other Sydney University students through wildlife-based field trips and courses, and bi-monthly talks.

Veterinary Science for Animal Welfare

VSAW (Veterinary Science for Animal Welfare) is a proactive student association dedicated to promoting and exploring issues of animal welfare.

A mass peaceful sit-in protest gained positive media coverage in April in the lead-up to the national meeting of State Government Ministers for Agriculture. Calling for a national ban on the practice of tail docking, the students wore T-shirts with the tag: VSAW: DOG TAILS MEAN HAPPY ENDINGS!

In September a well-supported petition regarding the live sheep issue was forwarded to the Prime Minister, numerous key federal politicians and the media.

Held in association with the Veterinary Science Foundation's J D Stewart Address, the highly successful inaugural VSAW Animal Welfare Photographic Competition drew more than 100 entries from staff and students. The competition was judged by Greg Weight, winner of the inaugural Art Gallery of NSW Archibald Photographic Award, and sponsored by Harvey Norman. Winners were: Colour and Grand Prize - Rose Anderson (Year 3); People's Choice - Alan Marcus (Year 2); Black and White - Penelope Kingston (Year 2); Digital - Christina Knight (Year 5); and Staff - Kristopher Hughes (Camden campus).

ROSE ANDERSON

"Kristine's Baby, Orangutan Rehabilitation Centre, Borneo" – the image that won for Year 3 student Rose Anderson the Colour Section and Grand Prize.

RSPCA scholarship win

Year 4 student Susan de Burgh was the recipient of the 2003 RSPCA Alan White Scholarship. Susan's project was Animal Welfare Education in Papua New Guinea and Australia. She spent a month in Port Moresby during September, staying at the RSPCA and visiting schools to promote animal welfare.

Student author promotes human-animal bond

Freelance writer and veterinary student Anne Quain reveals how her bond with her cat saved her during her struggle with depression in the anthology Cat Tales: The Meaning of Cats in Women's Lives, edited by Jan Fook, Susan Hawthorne and Renate Klein.

"I think the relationship most people have with their pets goes far beyond a simple 'pet and owner' association - many people will connect with the stories they read in Cat Tales," she says. Anne suffered a severe bout of depression in 1999 and her bond with her cat Lambie prevented her from taking her own life. "When my other relationships were breaking down, his unconditional devotion literally gave me a reason to live".

The value of this relationship led Anne to apply to study veterinary science and she says she has not looked back since.

"I know my experience is not an isolated one. The bond people have with their pets should not be underestimated".

Anne is currently completing an honours project (BScVet), and works as a freelance writer and photographer for several publications.

JAMIE FAWCETT

Year 4 veterinary student Anne Quain and her cat Michael.

FACULTY STAFF NEWS

KRISTEN CLARKE

Charmaine Piggott (left) and **Jasmine Feeney**, nurses from the University Veterinary Centre at Sydney, have become the first nurses in NSW to complete a Certificate in Advanced Nursing in Emergency and Critical Care (ARNRC). They also achieve fame in their spare time, both performing as trapeze artists.

Professor Frank Nicholas has been awarded the prestigious Helen Newton Turner Medal for 2003 and during July delivered the Turner Oration at the Association for the Advancement of Animal Breeding and Genetics. The Medal is the leading award for Australian livestock geneticists and perpetuates the memory of outstanding Australian scientist and sheep geneticist, Dr Helen Alma Newton Turner. Visit: http://agbu.une.edu.au/~aaabg/aaahnt.html

Associate Professor Rosanne Taylor and **Dr Michelle Hyde** have reached the finals of the 2003 Australian Awards for University Teaching – for the second time – and will attend the national award ceremony in Canberra in December.

New Faculty staff include: **Professor Tom Scott**, Chair in Poultry Science; **Dr Suresh Gulati**, Principal Research Fellow; **Dr Matthew Hobbs**, Senior Research Fellow in Bioinformatics; **Dr Patricia Holyoake**, Senior Lecturer in Intensive Animal Health; **Dr Christine Smith**, Veterinary Specialist (Large Animal Surgery) at Camden; and new Veterinary Registrars at the University Veterinary Centre Sydney **Drs Jane Heller** and **Ross McGregor**.

Faculty staff passing Australian College of Veterinary Scientists exams include: **Dr Sandra Macheroux**, Member in Small Animal Medicine, and **Dr Richard Kuipers von Lande**, Member in Small Animal Surgery. **Dr Linda Vogelnest** is now a Fellow of the Australian College, in Veterinary Dermatology, and is currently applying for specialist registration. **Dr Brad Dowling** from Camden was examiner for the College of Equine Surgery.

2004 senior Faculty Executive appointments include: Associate Dean, Staff and Students, **Professor Chis Maxwell**; Associate Dean, Teaching and Learning, **Associate Professor Rosanne Taylor**; and Associate Dean, Research, **Professor Gareth Evans.**

DR JULIAN LUNN

The Pet of the Year Annual is generously sponsored by Merial and FRONTLINE Plus. The perfect asset for every clinic waiting room, the Annual is published by Citrus Press and retails for $24.95. ISBN 0-9751023-0-3.

TRAINING LEADERS IN VETERINARY PUBLIC HEALTH MANAGEMENT

In February 2003 the Faculty of Veterinary Science commenced an articulated postgraduate program in Veterinary Public Health Management (Graduate Certificate, Graduate Diploma and Masters) to fulfil an urgent need for animal health professionals with skills focused on the national and international livestock industries.

One of the program's first students, Catherine Taragel, a Veterinary Officer with NSW Agriculture, says, "I enrolled because I wanted to keep growing professionally and deepen and broaden my knowledge within my current area of work, veterinary public health. I see this program giving me an edge when it comes to employment opportunities, both within Australia and overseas."

The flexible and innovative program is designed for busy professionals with a combination of distance education units delivered via online classrooms and short intensive residentials. For Catherine, the minimal residential units fitted in with her work and home life. "I also like the combination of technical expertise with personal development. As an undergraduate I was predominately technically trained - the leadership units enabled me to learn skills that are important personally and professionally."

2004 students will choose from a range of units of study led by facilitators including Dr Angus Cameron from AusVet Animal Health Services (Data Analysis and Management), the Faculty's Dr Jenny-Ann Toribio (Epidemiology), and Drs Edmund Peeler and Sophie St-Hilaire from the UK Centre for Environment, Fisheries and Aquaculture Science (Aquatic Epidemiology).

Veterinary Public Health Management student Ms Catherine Taragel, a Veterinary Officer with NSW Agriculture.

The new leadership unit is a collaboration with the University of NSW Australian Graduate School of Management.

Applications are invited for 2004 Veterinary Public Health Management units of study (closing date 28 November 2003), due to commence in February 2004.

For details and application forms, please visit: http://www.vetsci.usyd.edu.au/publichealth_management/index.shtml, or contact Program Administrator Hannah Forsyth on +61 2 9036 9105 or email vphmgt@vetsci.usyd.edu.au

NEWSOURCE

TRIM RETURNS FROM SEA

Trim, the contemporary version of Matthew Flinders' much-loved travelling companion, was given a health check by Associate Professor Geraldine Hunt, Director of the University Veterinary Centre Sydney, on her return from sea. Trim had just completed a re-creation of Matthew Flinders' 36,000km circumnavigation of Australia with her owner Captain Sarah Parry and the crew of the Windeward Bound. The small but intrepid feline survived falling overboard five times during the 17-month voyage.

TEACHING
WITH INNOVATION

An exciting new take on teaching and learning has been made possible by funding from the Andrew Thyne Reid Charitable Trust, secured through the Veterinary Science Foundation.

The Thyne Reid Teaching Innovations Unit has been established with a focus on online delivery and small group, inquiry driven and case-based learning. The Unit supports Faculty staff as they strive to develop students who are flexible, adaptive and self-directed learners – staff are trained in new approaches to position the Faculty as an innovator in veterinary and animal science education, and are guided in researching the impact on student learning.

A critical project has been the Virtual Clinical Campus. An online information portal for Year 5 students, it ensures they can keep in touch with staff and access learning resources while working off campus in extramural rotations.

Other projects include ICAP, Integrative Case-based Applied Pathology, a case-based learning resource for Veterinary Pathology with print and online resources including client comments, diagnostic images and post mortem findings. A similar case-based Microbiology program, CAVMOL, enables students to solve problems and review their understanding of infectious disease processes using resources such as diagnostic imaging and patient information.

The Thyne Reid Teaching Innovations Unit team (Left to right): Gerard Marcus (Educational Developer and Instructional Designer), Sally Pope (WebCT support), Irene van Ekris (Unit Manager), Ashleigh Schipp (Administrative Assistant), and Federico Costa (the Faculty's Web Services Coordinator). (Missing is Sandro Nocentini, Digital scanning support).

Gerard Marcus, Educational Developer and Instructional Designer, says he and the other unit staff are committed to developing learning resources that engage, enthuse, motivate and challenge. "The Faculty already has excellent online resources such as WebCT, VEIN (Veterinary Education and Information Network) and OLIVER (Online Image Library for Veterinary Education and Research). We're here to help staff design innovative programs around these resources, and to ensure they're delivered effectively."

CLOSE UP

SANDRO NOCENTINI

DR PAUL McGREEVY (AND WALLY)

What is your current position?

Senior Lecturer in Animal Behaviour.

What qualifications do you hold?

PhD, BVSc, post-graduate Certificates in Higher Education and Companion Animal Behavior Counselling, Qualified Riding Instructor.

How did your career begin?

Sitting in a paddock watching horses. As kids, my sister and I used to work for a horse dealer, breaking in young horses and trying to sort out the trickier older ones. I considered becoming a farrier to work with horses, but elected to knuckle down and get the A-levels required for vet school.

The horses took second place when my sister and I volunteered at a mixed veterinary practice. Eventually we went to the same Vet School - Bristol – of the BBC TV series. I was in practice in the UK and Australia for five years, returned to Bristol to take a PhD in Horse Behaviour, then took up a lectureship at the Sydney Faculty in 1996. I have been here ever since and I love my work.

What are your current key projects?

Apart from various research projects in horse and dog behaviour and welfare, I supervise PhD students working on baboons and seals. I also spend a great deal of time managing the OLIVER image library, and with Professor Frank Nicholas and Federico Costa, I am working on an ambitious new project called the Listing of Inherited Disorders in Animals (LIDA) – something that should be of tremendous benefit to the community.

What project is giving you the most satisfaction at the moment?

Sitting in a paddock watching horses. I am currently on sabbatical at the University of New England in Armidale developing the first tests of lateralisation (left and right handedness) in horses. The first step is to observe horses as they go about their daily business - a great change for me because most of my previous research has involved behaviour of stabled horses.

What have been your career highlights?

Writing four books and winning the Prince Laurent Prize, the leading international animal welfare award, for my work on horses.

What do you do in your (limited) spare time?

1. Relax with friends.

2. Voluntary work for animal welfare charities.

3. Walk Wally - about 1.5 hours per day keeps him reasonably content and my beer belly at bay.

Tell us about Wally

Wally is a large blue merle crossbred dog born in 1997. He's a fixture around the Faculty and helps me with animal husbandry and behaviour lectures. He's been on Catalyst, Totally Wild, several episodes of the ABC's Animal Attraction program and NRL TV and Oak Flavoured Milk TV advertisements. His fees and some of my book royalties go towards an annual student prize for animal welfare science, The Wally McGreevy Prize.

Who inspires you and why?

Any vets who demonstrate that animal welfare is truly their priority. Vets are uniquely placed to be advocates for animals in their care but it is easy to be distracted by the financial aspects of a case or the owner's agenda. Unless they are acting in the animal's best interests, vets are more like technicians than physicians.

THIRTY-FIVE YEAR OLD "MUSEUM" FLOCK

During the 1960's, Dr Steven Salamon of the Faculty's then Department of Animal Husbandry, pioneered the cryopreservation of ram semen, paving the way for modern artificial breeding techniques.

More than forty years later, in April 2003, ReproGen researchers Professors Chis Maxwell and Gareth Evans, Dr Lindsay Gillan and team - with octogenarian Dr Salamon in attendance - thawed some of the earliest stored semen (cryopreserved in 1968) and used it to impregnate forty-six Merino ewes.

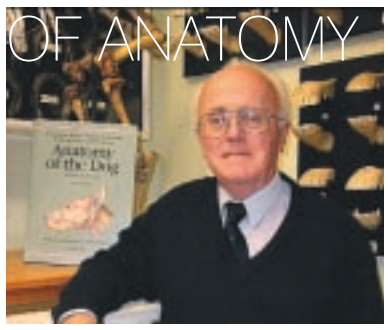
The result - forty lambs, including some twins, were born in September at the University Farms in Camden. The lambs have a slightly "old-fashioned" appearance and are obviously offspring of prime Merino rams of thirty-five years ago, the days when fine wool strains were popular.

This is the longest recorded successful storage of ram semen worldwide. The exercise demonstrated the maintenance of fertility of semen with long-term storage in liquid nitrogen. This has great significance for conservation, suggesting that semen of rare and endangered breeds or species can be cryobanked for long-term future use.

GARETH EVANS

Two of the forty lambs born to semen stored in 1968 by the then-new technique of cryopreservation pioneered by the Faculty's Dr Steven Salamon.

FIFTY YEARS OF ANATOMY



Dr Pat McCarthy (above) has devoted his career to the discipline of veterinary anatomy – and almost fifty years after graduating from Queensland University, he is still contributing significantly to veterinary education worldwide.

Dr McCarthy is co-author of the fourth edition of the text-atlas, Anatomy of the Dog, published by Schlütersche. One of the texts recommended for the Faculty's Year 1 anatomy students, it is dual purpose, written at both a theoretical and applied level.

A Senior Lecturer in Veterinary Anatomy at Sydney University from 1974 to 1995, Pat also spent time in the 70s and early 90s at the Veterinary Anatomy Institute in Berlin. His German language skills enabled him to translate the first edition of this text into English.

Pat remains a part time tutor in anatomy at the Faculty, and he also teaches live equine anatomy at the Mounted Police Complex at Surry Hills. He combines this with on-going personal research into the "anatomy of subcutaneous structures in the live horse as detected by the senses of sight and touch".

VEIN

www.library.usyd.edu.au/VEIN/

The VEIN website (Veterinary Education and Information Network) has received over 340,000 hits since January from all over the world. Scholarly sites recently linked include the Universities of Hanover, Barcelona, Minnesota, New England, and Florida.

Current popular links pages include dogs, horses, anatomy and physiology, career and employment, exotic diseases, marine mammals, cattle, animal behaviour and urban animal management.

The Unit of Study page for Year 5 students has been redeveloped to extend Library services to students on extramural placements, and they can now request books and articles, access databases and seek assistance from any location.

Membership of VEIN Community, funded by the Post Graduate Foundation, is also increasing with a focus on document delivery and information request services. Contact VEIN for further information:
http://vein.library.usyd.edu.au/about/contacts.html

Joss Stewart (above) is a loyal client of the University Veterinary Centre at Sydney and a generous supporter of the Veterinary Science Foundation. Her dog Sparky not only goes to work with Joss each day, he does so in style on the back of a smart Italian Vespa (and he and Joss are both Swans supporters).