

ROUNDHOUSE



Newsletter of the Veterinary Science Foundation of the University of Sydney

June 2010



"Protecting
Australia's
wildlife icons"



THE UNIVERSITY OF
SYDNEY



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If you would like to make a donation or leave a bequest to the Veterinary Science Foundation please contact Carrie Elton, Director of the Veterinary Science Foundation, on 02 9351 8024 or email at carrie.elton@sydney.edu.au

FROM THE DIRECTOR

There's a lot to celebrate in a Centenary year and the first six months of 2010 have kept us busy. The first weekend in May saw more than 400 former staff, alumni, current staff and students celebrate the Faculty's 100 years of academic excellence, veterinary care and community service. A highlight was the Centenary Reunion Dinner, 'A Night to Remember – the School at the foot of the hill' which was a splendid affair.

The Roundhouse, which underwent an extensive renovation just in time for Centenary events, was the centrepiece of the 'Back to the Roundhouse' gathering on the 2nd May.

In the midst of all the excitement we're also continuing to put on some of our biggest annual events including Professor Chris Goodnow delivering the JD Stewart Address on July 28 and Professor John Edwards delivering the Beveridge Memorial Lecture on November 17. And don't forget to keep a look out for Animalia on October 22 and the Pet Fair on August 28.

The Foundation is very proud to be able to support the Faculty as it continues to provide world-class veterinary teaching and research. It's a testament not only to the veterinary profession, but also our students, staff and the community, that we are able to celebrate this important milestone. To mark the occasion we have launched a Centenary Appeal, which has a goal to raise \$500,000 to support the Faculty in the coming years. Donations of \$1000 or more will be recognised on the Centenary Roundhouse Honour Roll.

We look forward to continuing the celebrations and your support throughout 2010.

Carrie Elton

FROM THE DEAN

Welcome to our first Centenary edition of Roundhouse. We've already had a number of events celebrating the Faculty's 100 years of commitment to veterinary education and I hope we'll see more of our alumni and friends at events planned over the remainder of the year.

In March I presented the Faculty's innovative assessment methods to the American Association of Veterinary Medical Colleges' annual meeting. There was also an opportunity to meet with the World Bank to pursue partnerships in improving the standard of veterinary education and service around the world. Our Faculty makes a strong contribution to food security, veterinary public health and disease surveillance through capacity building workshops, field training and a diverse range of research projects across South East Asia – and is poised to extend its impact, particularly in Africa and South America.

The Faculty continues to strengthen its international partnerships, with genomics, conservation and welfare research projects underway in the UK and USA. In May we signed an agreement with NC State University to develop student exchanges between the two Universities, adding to agreements we have in place with leading veterinary schools in the UK, Europe and North America. In November 2009 the Faculty hosted a visit by 24 members of the Chinese Association of Animal Science and Veterinary Medicine (CAAV), on veterinary education and research in Australia.

The Faculty has played a pivotal role in the new Sydney Institute for Emerging Infectious Diseases and Biosecurity which was officially launched in May (see page 8). The Faculty also made a strong showing at the Institute's inaugural conference held on May 19 and 20.

As an institution and a Faculty we are firmly focused on attracting and supporting the most promising students and brightest researchers, enabling them to achieve their potential and in doing so, serve our community.

Rosanne Taylor

THE LITTLE AUSSIE BATTLER

In northwest Tasmania, scientists have found a population of Tasmanian devils that are free of the devastating Devil Facial Tumour Disease (DFTD). A paper published in the journal *Proceedings of the Royal Society B*, shows that a small number of devils in this population are genetically different. It is a discovery that is likely to have significant implications for the survival of the Tasmanian devil in the wild.

The Tasmanian devil is currently listed as endangered. Scientists estimate that we have already lost 70 per cent of the population and that the disease may spread across the remaining numbers within five years, with possible extinction within 25.

It's still early stages but lead author of the journal paper, Associate Professor Kathy Belov believes this recent discovery is promising. "The majority of devils in Tasmania are genetic clones and therefore susceptible to DFTD. We think these genetically different devils might be able to see the cancer cells as foreign and mount an immune response to them, potentially making them resistant to the disease."

Professor Belov is quick to caution that the discovery of this potentially resistant population should not change the overall aims of efforts to save Tasmanian devils in the wild. At best, she believes it buys scientists more time. "I think we have to continue on as before. The long term goals are to suppress the disease, try to

vaccinate animals and continue on with the insurance and captive breeding programs until we've got a handle on the disease."

She believes the captive breeding programs should maintain as much genetic diversity as possible. The more diversity a devil has in its genes, the healthier and fitter the population is in terms of mounting an immune response to the disease. "We don't want to just breed resistant devils because that would further minimise the gene pool. At this stage it looks like about 20 per cent of devils could be resistant but that means we're going to lose 80 per cent of the genetic diversity if we allow things to carry on as nature intended".

DFTD is a contagious cancer specific to the Tasmanian devil and most commonly spread through biting. Professor Belov is concerned that we may begin to see a mutation of the disease with the potential risk that it may jump species. Her research work is now looking towards the evolution of the tumour.



"What is worrying is that we are seeing the tumour evolve and change. I think what we're going to see over time is the emergence of tumour strains that will eventually affect these genetically different devils.

"We've seen a similar case in wolves. The tumour originated in wolves that lacked genetic diversity in their MHC genes. Over time the tumour evolved strategies to evade the immune response so it actually stopped expressing the MHC molecules on the surface of the tumour cell. As soon as a cell appears that doesn't have MHC on its cell surface then it could cross the MHC barrier, so for instance it could cross into wolves with a different MHC type, or into different species like coyotes, jackals and dogs. We now know that it's found in all of those species and spread over six continents. If I was a betting person that's what I'd guess we will see happen with DFTD. It will find a way to down regulate its cell surface MHC so that it becomes invisible to the immune system. There's going to be very strong selection pressure for the tumour to then cross into animals with different MHC genes."

If you'd like to make a donation to the Tassie Devil program please visit: sydney.edu.au/vetscience/Foundation/help/devil.shtml

BREAKTHROUGH FOR AUSTRALIA'S GROWING BARRAMUNDI INDUSTRY



Australia's fisheries and aquaculture industry currently outstrips our wool industry in terms of its production value. But the aquaculture industry faces an enormous challenge from the emergence of infectious diseases, including nervous necrosis virus. A group of scientists in the Faculty are using new technologies to improve detection of the disease and provide greater certainty for fish farmers.

You'll know when a fish has nervous necrosis virus. It begins to swim in a spiral motion, somewhat like a corkscrew. It does this because the virus typically manifests in the fish's brain or eye. In two to three days it will likely die from the disease.

Nervous necrosis has caused substantial setbacks to Australia's fledgling aquaculture industry, in many cases depleting entire batches of Barramundi and Australian bass stock. To date, tests to detect the virus have been inconsistent, but a leap in DNA-detection technology means a new test for the virus is now available.

Led by scientists in the Faculty, the new testing uses a real-time polymerase chain reaction (PCR) method and specialised tissue extraction processes. It is a more sensitive test that will allow scientists to concentrate the genome from the virus.

"The old test was not very sensitive and in many cases infection was present yet test results still turned up negative," said Professor Richard Whittington, Chief Investigator in the ARC linkage project. "For that reason the result of the test did not really predict the likelihood of an outbreak occurring."

In addition to being better able to predict the disease, the virus can now be grown in a laboratory environment which will allow scientists to better understand how the virus works and what potential impacts it may have. Paul Hick, a PhD student working on the project suggests they will now be able to detect the disease at the sub-clinical infection stage which means they can isolate infected fish from non-infected fish and determine whether the disease is a threat to healthy populations.

At the moment, the uncertainty regarding the viral impact on healthy fish populations has slowed the expansion of the barramundi industry and hampered its productivity. Governments are understandably reluctant to allow the restocking of wild fisheries with aquaculture fingerlings until they know the extent of the disease in the wild and its potential to spread from aquaculture. "With this new testing we can now develop good solid knowledge about the virus and make better decisions about these kinds of issues," said Paul.

The nervous necrosis virus affects up to 35 species of fish worldwide but in Australia its biggest impact has been

on the aquaculture industry, particularly barramundi hatcheries. In some hatcheries there have been reports of 100 per cent fatality rates.

"Once the virus has wiped out a fish population it may take a farmer months to reproduce that stock," said Paul. "A successful outcome of this project would be our ability to provide the fledgling aquaculture industry with more certainty."

The project was a three year collaboration with the Northern Territory Government, the Berrima Veterinary Laboratory and the Darwin Aquaculture Centre.

In recent developments, the Fisheries Research and Development Corporation has approved a new national three year project led by Professor Whittington which will see the new tests extended to all aquatic animal health diagnostic laboratories in Australia. The Australian Centre for International Agricultural Research has also funded a project in the Faculty to train Indonesian scientists in the new technology, as the nervous necrosis virus has emerged as a problem throughout the region.

TRACKING AN AUSTRALIAN ICON



Australia's koala population has reportedly been in steady decline for a number of years. In NSW the koala is listed as 'vulnerable', with reports of less than 80,000 left in the wild. But a koala population in Sydney's Campbelltown area seems to be bucking the trend. While vulnerable to many of the threats typical to koala populations, scientists in the Faculty believe they are now seeing an increase in its numbers. *Roundhouse* takes a look at a Faculty project tracking a unique koala population.

"Koalas are notoriously hard to find and it's often difficult to determine population sizes. But we think this current population is about 300-400, making it one of the largest koala populations in Sydney," said Tristan Lee, a PhD student in the Faculty who has been working on the project for four years.

Tristan believes the increase in numbers may be due to the population recovering from a crash, rather than an already large population growing even further. In a paper recently published in the journal *Wildlife Research*, Tristan and his colleagues have found that the genetic diversity of the Campbelltown koala population is quite low. "We're not quite sure why but it looks like the population suffered from a genetic bottleneck, most likely as a result of the fur trade of the early 1900s. It probably then expanded again from a very small pool of koalas, leading to the lack of genetic diversity we see today. This genetic evidence seems to support what we're seeing ecologically."

The site of this koala population is particularly significant. It covers

25,000 hectares of bush bordering Campbelltown and the Holsworthy Army Base, and is perhaps one of the best studied koala populations in Australia. With data collected over a 20 year period, the project has developed an extensive database with information on koala biodata, tracking statistics, and mortality and fertility rates. They know for example that many of the female koalas have one baby every year and that cars are one of the main causes of death in the koala population.

One of Tristan's tasks has been to track and record the koala's details. "Conservation efforts rely on good data that can show population trends and this is one of the key reasons we collect the data," said Tristan. "We've fitted the koalas with radio and GPS collars which allows us to determine things like migration movements, what a koala's home range is, and if their numbers are increasing or decreasing. We can also see what their tree preferences are, which is helpful in terms of land conservation and replanting."

In addition to the appearance of an increase in its numbers, the population is unique for another reason: the absence of *Chlamydia* in the population. *Chlamydia* is a major cause of infertility in many koala populations, but as yet there have been no reported cases in the Campbelltown population. *Chlamydia* has long been a cause of concern, but koalas also face many other threats including habitat loss, dogs and cars, bushfires and other diseases such as conjunctivitis and skin cancer.

According to Tristan the main threats to this particular population are urbanisation and road kill. For many years the Holsworthy Army Base and the water catchment area created artificial buffers that protected the habitat in which the koalas live. But they've now found that the koalas are starting to spread out of these protected areas and into people's backyards. "We're seeing some threat from urban creep as the koala's habitat is on the fringes of a residential area," said Tristan. While development poses challenges, Tristan believes koalas may increasingly become a part of the Aussie backyard.

"Of course we want to see some compromise between development and the protection of koala habitats. But I think what we're seeing with this population is that they are learning to live in urban areas. The sight of a koala in your backyard might become as common as a cockatoo," he said.

The study of the Campbelltown koala population is an ongoing joint project with the University of Western Sydney.



Photographs by Lance Jurd

FROG CROSSING: PROTECTING THE GREEN AND GOLDEN BELL FROG

Most of us will remember the Green and Golden Bell Frog as the unofficial mascot of the Sydney Olympics. Parts of the Olympic Village were moved to accommodate key breeding sites of the Green and Golden Bell Frog, and frog crossings set up to protect them from cars. So common was the frog in and around Sydney that it was used in dissection classes, until someone realised they were under threat in the wild. With reports that the frog numbers have dropped 30 per cent over the last 10 years, the Green and Golden Bell Frog is now classified as 'critically endangered' in New South Wales. This has caused it to be the focus of a number of captive breeding

programs aimed at reintroducing the species into the wild. Myxosporean parasites have the potential to be a risk to these programs.

Myxosporeans are complex parasites. There are 2500 known species and so far scientists have only established the lifecycle of 33 of them (all in fish). It doesn't necessarily kill a fish but it usually causes some sort of disease, particularly if it comes in to contact with a new host. The organism is shed as an environmentally resistant spore from the vertebrate host and is thought to then replicate in an invertebrate host before producing an entirely different looking spore that can then infect another vertebrate. Because the spores



A myxosporean parasite has recently emerged as a potential risk to the Green and Golden Bell Frog. As part of her postgraduate research, Ashlie Hartigan is studying the parasite's lifecycle. Although similar parasites have been found in a number of fish species such as trout, this parasite has never been studied in frogs before, and the findings are likely to have considerable impact upon the conservation efforts of this already endangered species.

are so different it took scientists over 40 years to make this discovery and was a considerable breakthrough in understanding how the disease works. No-one yet knows the impact of the disease on frogs and it's an area Ashlie hopes to shed some light on.

"We've found the parasite in both frogs and tadpoles of native and exotic species. In tadpoles it looks like its causing disease that affects their behaviour, liver and possibly delayed metamorphosis. This will affect their ability to survive in the wild, making them prone to being eaten," said Ashlie. "If we can map the development of the myxosporean parasite in the frog then we can interrupt the cycle, remove it during breeding programs and therefore have 'clean' frogs to release into the wild."

As part of the project Ashlie will also determine if the parasite is particular to captive breeding programs or whether it also occurs in the wild. "If we find it exists in more captive breeding programs then we might

have to change things like husbandry techniques or screening of stock tadpoles," she said. "There are very strict rules for releasing captive bred tadpoles into the wild. We want parasite free captive breeding programs so that we can ensure there are no health risks to wild populations."

Since 1996 there have been a number of attempts at breeding and translocation programs. Ashlie says the success of these programs have been hindered by urbanisation and the idiosyncrasies of the frog itself. It's a strange frog that doesn't seem to want help, she says. Or perhaps it just has a wicked sense of humour. "They preferred the rough habitat of the brick pit at the Olympic Park at Homebush to the beautiful lush ponds set aside for them. They are still breeding well in these unlikely sites. There has been a lot of money and effort put into breeding programs but in many cases the frogs either die or they move on to somewhere else."

Oddities aside, the Green and Golden Bell Frog is a species at risk and Ashlie Hartigan is determined to ensure they have the best possible opportunity for survival. "We're on track to be the first people to determine the lifecycle of the myxosporean parasite in a frog. The next step will be to find out what impact this disease has on captive breeding programs and how we can ensure we are rebuilding a disease-free Green and Golden Bell Frog population in the wild."

Ashlie presented her findings on the myxosporean parasite in frogs at the European Association of Fish Pathologists Conference in 2009. Her work in collaboration with the Department of Environment, Climate Change and Water will be presented at the 2010 Australian Veterinary Association Conference in May.

MANAGING PANDEMICS AND PUBLIC HEALTH

BSE, SARS, avian flu and the H1N1 virus. Over the last decade the world has seen a number of significant pandemics, and their impact is felt beyond the immediate human and animal health concerns. Scientists at the University have responded by creating a new Institute that takes a multi-disciplinary approach to dealing with emerging and re-emerging infectious diseases.

In September 2009 a Queensland property was quarantined after a horse was found to have contracted the hendra virus. The horse died, as did the attending vet. Three staff members were treated with an anti-viral drug and later released from hospital. The characteristics of the hendra virus are still largely unknown. Its origins are uncertain, although bats are known carriers and are thought to be the main reservoir for transmitting the disease to horses. The method of transmission is inconclusive; from horses to humans it is thought to be passed in close contact through body fluids or via the respiratory route, from bats to horses it could be through the licking or eating of sick bats. We know that in horses the virus is deadly. And we know that when transmitted to humans it can also be deadly.

In our increasingly crowded and inter-connected world, how we manage the transmission and treatment of such infectious diseases is a pressing concern. Last year's H1N1 outbreak, the SARS outbreak of 2003 and the avian flu outbreak of 2004, all highlighted the challenges faced by those responding to global pandemics. From public health concerns to agricultural practices and economic costs, infectious disease pandemics have the potential to impact almost every facet of our lives. It is the pervasive nature of the problem that

lies behind the philosophy of a new Institute at the University which aims to increase the capacity of responses to emerging and re-emerging infectious diseases.

On May 19 the University of Sydney launched the Sydney Institute for Emerging Infectious Diseases and Biosecurity (SEIB). Officially opened by the Deputy Premier and Minister for Health Carmel Tebbutt, the Institute brings together a wide range of expertise in public health and associated disciplines, ranging from the biological sciences including medicine, veterinary science, nursing and midwifery, science and pharmacy to the social sciences including arts, communications, political science, ethics and law. For diseases with such wide-ranging impacts, such an inter-disciplinary approach is essential.

"One of the main motivations for the Institute was an appreciation made immediately obvious by the H1N1 swine flu pandemic last year that in order to prevent and contain and communicate appropriately about such outbreaks one needs a multi-disciplinary approach to the problem," said Professor Tania Sorrell, Director of SEIB.

The breadth of disciplines involved is a novel component of the new Institute, so is its capacity to contribute across all levels of the public health spectrum.

"A key advantage of the University is that we have an enormous amount of academic expertise in a wide range of faculties and schools. We also have a major public health laboratory at Westmead and infectious disease and diagnostic microbiological expertise in the area health services. Many of us also sit on advisory committees to government. What this means is that we are able to translate the research right through to policy and practice and hence reduce risks, contain outbreaks and improve health outcomes," said Professor Sorrell.

The Centre is broadly dedicated to research, education and capacity building, advocacy and the provision of expert advice on infectious diseases, with a particular focus on the Asia-Pacific region. These outbreaks and epidemics cross international borders with relative ease and highlight the need for close collaboration between countries, in many cases to try and control these outbreaks at their source and prevent widespread pandemics. "We've seen with SARS and the avian flu that it's not easy to predict outbreaks, so it's important that when they are identified a network of health authorities are notified quickly and regional or international responses kick in accordingly," said Professor Sorrell.

While there is some debate about whether infectious disease pandemics are on the increase, there is no doubt that our capacity to detect them has been made easier by newer technologies. "Travel, natural disasters, agricultural practices, climate change, these are all contributors to causes of social disruption that allow these diseases to occur. I think there's always been a background of epidemics and pandemics but with newer technologies our ability to identify them, localise them, and communicate more effectively about them has probably got something to do with their perceived increase," said Professor Sorrell.



Professor Tania Sorrell



Professor Michael Ward

As humans and animals increasingly encroach on each other's habitats the need for a 'one health' collaborative approach between human and animal health is paramount. "We know that such encroachment is responsible for 60 per cent or more of disease outbreaks. And of that 60 per cent about 70 per cent are due to interactions between wildlife and humans," said Professor Sorrell.

Professor Michael Ward, Chair of Veterinary Public Health and Food Safety at the University, believes these incursions and their impacts pose considerable challenges for human and animal health. "A lot of these diseases have ecological aspects related to

urbanisation, habitat destruction, tourism and recreational pursuits. There needs to be a lot more public education done so that people understand the long term causes of some of these problems," he said.

In addition, Professor Ward believes that decisions, like those made around hendra virus outbreaks, tend to be driven by a human hazard perspective which can ignore the role animal health can play. "There's not a lot of understanding of the features of the diseases in animals. Animal populations are often relevant to the human health aspect and need to be a part of the decision making. A lot of it is just about awareness, education

and understanding. Often there's a perception that animals are just the problem rather than being potentially part of the solution. To control these diseases it's really important that we understand what's going on from the animal side as well," he said.

In recent weeks there has been another hendra virus outbreak. These infectious diseases are unlikely to go away. They occur through an often long and complex chain of events that impact animals and humans alike. But the inter-disciplinary nature of the SEIB provides perhaps our best opportunity to manage such outbreaks.

SYDNEY INSTITUTE OF EMERGING INFECTIOUS DISEASES AND BIOSECURITY CONFERENCE

A conference presenting the latest research on combating emerging infectious diseases was hosted by SEIB on May 19 and 20. The conference brought together leading public health and veterinary academics, academics from the areas of law, ethics, science, medicine, nursing and midwifery, media studies, biosecurity and climate change, and senior government health and veterinary officers. A high level delegation from the Indonesian Ministry of Health and the University of Indonesia also attended, highlighting the Centre's commitment to regional collaborations and partnerships.

E-LEARNING: RESOURCES OF THE FUTURE

Antroy (2010)

Consultation 1

Case Detail

The Scenario
You are working at a specialist clinic at Port Macquarie. You have been asked to examine a free ranging koala being considered for a Cryptococcosis trial.

The Patient
"Antroy" is a 14-year-old female Koala, who on presentation, does not appear to be in very good health.

Your Task
To complete this activity, you must access the links on the **Forms** section on the right-hand side of the page.

- view information
- view the patient's history
- view the outcome
- get help on the case

When you have filled in the forms, click on the **Case Report Submission** link.

Histopathology

Consulting Room
[Physical Examination](#)
[Physical Examination](#)
Diagnostic Aids
[Haematology](#)
[Biochemistry](#)
[Urinalysis](#)
[Abdominal Ultrasound](#)
Outcomes
[Basis of Decision to Post-Mortem Finding](#)
[Histopathology](#)
Forms
[Case Report Form](#)
Learning Support
[Suggested Approach](#)
[Case Support Diagrams](#)
[General Hints](#)

They're interactive, inventive and great learning devices. E-resources are quickly shaping the future of learning and teaching practices. *Roundhouse* takes a look at the Faculty's award-winning e-learning system, in particular the Resource Builder tool.

Chloe presents as a cat with breathing difficulties and nasal discharge. A brief history shows she is a stray that was acquired from a veterinary hospital six years ago. She has lost almost half her body weight over the last six months despite being a healthy eater. After an online physical examination of her appearance and her ear tract, tests that check her vitals and respiratory system are conducted and an assessment and action plan compiled. Further diagnostic tests are run such as a urine analysis and an endoscopy. Finally, a treatment plan for Chloe is developed.

From assessment to diagnosis that whole process was undertaken through Resource Builder, one of the Faculty's e-learning tools. A team of the Faculty's veterinary and technical specialists developed Resource Builder in 2007 as an online case-based teaching tool. It involves a suite of templates that enable educators to build a variety of interactive cases and quizzes to be undertaken by veterinary and animal bioscience students.

Following an extensive review and feedback program, the Faculty recently launched a revised edition. "With the new version we've made the software more navigable and searchable. It's a complete package of improvements that brings Resource Builder into line with commercial products," said Sally Pope, Sub Dean for ICT and e-learning.

"There are other case-building tools available but the feedback we've received from our users is that Resource Builder ticks all the boxes. It's interactive, creative, adaptable and versatile, and it's easy to use," said Sally. The template can also be adapted for use outside the veterinary field and users from other disciplines have found the software valuable to their own needs.

Resource Builder is made up of four templates from which online cases can be developed: the Case Builder, Hot Cat, Image-based Quiz, and its most ambitious template, the Virtual Practitioner. In Virtual Practitioner, students are given complex clinical cases to solve online. They must work

through a process of assessment, diagnosis and treatment of a sick animal. This includes conducting tests, formulating problem lists, making complex diagnoses and sticking to a budget. According to Sally, it's an online exercise that mimics a consultation case that students would be faced with in the real world.

Resource Builder follows a fairly logical learning process. Educators create the cases that form the basis of the interactive templates. A link is then sent to students through WebCT which they can click on to begin their interactive case-based activity. According to Sally: "Resource Builder acts as a complement to face-to-face teaching. It can be geared towards use as a revision tool, or for group work or summative assessment, but should not be seen as a replacement to the very important teaching and learning processes that occur through face-to-face teaching."

The Faculty was an early adopter of e-learning and maintains a progressive attitude towards its benefits to teaching and learning practices. "The Faculty has an ethos for the importance of e-learning and since 2000 it's been well supported across all levels of the Faculty. From 2003 onwards we've really emphasised student-centred learning and e-learning is a major part of that," said Sally. In 2009 the Faculty's e-learning program, of which Resource Builder is a part, won the Vice-Chancellor's Award for systems that achieve collective excellence.

EVENTS

JD STEWART
ADDRESS“IMMUNOLOGY
AND VETERINARY
ADVENTURES ON A
MOUSE RANCH”

Professor Christopher Goodnow will deliver this year's JD Stewart Address, titled "Immunology and Veterinary Adventures on a Mouse Ranch".

Professor Goodnow pioneered the use of molecular genetics in mice to reveal key mechanisms that regulate the immune system. One key mechanism is the way the immune system learns to differentiate between our own tissues and those of invading foreign microbes. This is the process by which we can build up immunity to infection but tolerate our own tissues.

Professor Goodnow's work has changed the conceptual framework of the field of immunogenomics by showing that tolerance to self is acquired through a series of regulatory checkpoints at many steps in the maturation of immune cells.

Professor Goodnow is an alumnus of the University of Sydney and the Director of the Australian Phenomics Facility and Director of the Immunogenomics Laboratory at the John Curtin School of Medical Research, ANU.

Venue: Veterinary Science Conference Centre, University of Sydney

Date: 6:00pm (for 6.45pm), Wednesday 28 July 2010

RSVP: Rachel Cruz

T (02) 9351 8026

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IAN BEVERIDGE
MEMORIAL
LECTURE

Renowned for his work on new and emerging diseases, Emeritus Professor John Edwards will deliver this year's Ian Beveridge Memorial Lecture.

Professor Edwards is Executive Director of One Health Solutions, a company that consults in Australia and Asia in the fields of biosecurity, one health and veterinary education.

Professor Edwards was formerly Dean of the School of Veterinary and Biomedical Sciences at Murdoch University, Regional Coordinator for the OIE Southeast Asia Foot and Mouth Disease Campaign and Chief Veterinary Officer for Western Australia. He is also a member of the Epidemiology Chapter of the Australian College of Veterinary Scientists.

Venue: Veterinary Science Conference Centre, University of Sydney

Date: 6.30pm, Wednesday 17 November 2010

RSVP: Rachel Cruz

T (02) 9351 8026

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sydney.edu.au/vetscience/Foundation

ANIMALIA

The Veterinary Science Foundation works by our pledge, "Because animals matter". It's a message that resonates loudly through all our work, and in particular as we raise funds for the vital work of the Faculty of Veterinary Science.

We invite you to join us at our major annual fundraising event, Animalia, and celebrate our Centenary year. You'll enjoy an evening of fine dining, great music and a few surprises as we raise critical funds for the health and welfare of animals, research and education.

Additional attractions include Animalia's special pre-dinner entertainment in the Quadrangle.

Save the date

Venue: MacLaurin Hall, The University of Sydney

Date: 6.00pm, Friday 22 October 2010

For more information, and to book your ticket or table of ten contact:

T (02) 9351 8026

E vetscience.vsf@sydney.edu.au

sydney.edu.au/vetscience/Foundation



CENTENARY RESEARCH SHOWCASE

The Faculty has an impressive diversity of research interests and is leading the way in key areas of veterinary and animal sciences. The Research Showcase will reflect state-of-the art science with presentations across a range of themes, including Applications of Genome Science, Wildlife Health and Conservation, Emerging Infectious Diseases, Sustainable Animal Production Systems, International Aid, Regenerative Medicine, Companion Animal Health and Aging, and more.

Venue: Veterinary Science Conference Centre, University of Sydney

Date: Wednesday 28 July 2010

RSVP: Marie Wildridge

T (02) 9351 1620

E marie.wildridge@sydney.edu.au

sydney.edu.au/vetscience



L-R: Professor Warwick Arden
with Jarvis Hayes

ALUMNI PROFILE: WARWICK ARDEN

Interim Provost at NC
State University.

Warwick Arden is one of those people who knew what he wanted to be from an early age. In Tumut, the small country town where Warwick grew up, the local vet was the centrepiece of the community. He was also a young boy's inspiration.

"I always saw the vet as someone who looked after your companion animals, but also your farm animals, the agriculture infrastructure, food safety and public health. They were not only a compassionate individual who loved animals but also a really important element of the social fabric of a small rural community. Very early on I developed a love of the profession, and from the age of 14 that's all I really wanted to do."

Over the course of his career Professor Arden has pursued that passion on both sides of the Pacific. After graduating

from the University of Sydney in 1981, he did an internship at the Rural Veterinary Centre for a year and then in 1983 left for the US to pursue postgraduate opportunities in advanced surgical training. "It can be argued that at that time the US had the highest level of postgraduate training for veterinarians in the world and arguably still does. If you wanted specialist postgraduate training then you went to either the US or the UK".

Professor Arden has spent more than thirty of his professional years in various jobs in the US, including as Director of the Surgical Research Program at the University of Kentucky and as Dean of the College of Veterinary Medicine at NC State University.

While he calls veterinary medicine his natural academic home, it's his most recent role as Interim Provost at NC State University that has been one of the most challenging and rewarding of his career. "I have to think about 10 different colleges, the graduate program, the undergraduate population, and the budget of the University. It's given me the opportunity to take on new challenges and make significant contributions to something I care very

much about which is the role higher education plays in our society as a whole. I find it very engaging, and very stimulating and I feel very privileged to have this opportunity."

Over the years Professor Arden's contact with the University of Sydney has been intermittent; distance and the focus on developing his own professional career has preoccupied his time. But he says in his older age he has felt compelled to rediscover some of his roots and look for opportunities to contribute to an institution that has had a significant influence on his life. In May he returned to help celebrate the Faculty's Centenary. He also signed an agreement to create greater exchange opportunities between NC State University and the University of Sydney, and spent three days evaluating the Faculty's Veterinary Teaching Hospital program.

"The University of Sydney has made a significant difference in my life. It gave me an invaluable education which has held me in good stead. If there are ways I can come back and build relationships with the university then I'm very enthusiastic about that."

On a sunny May afternoon Professor Arden seems to have come full circle. Under the canopy of the refurbished Roundhouse and with cold beer in hand, he caught up with Jarvis Hayes, Tumut veterinarian and his mentor from those early years as a young veterinary student. Himself a graduate of Sydney University in 1953, Jarvis was the rural vet that first inspired Professor Arden's interest in the profession, and he spent many of his student years working in Jarvis' rural practice. "To sit in the sun, have a beer with him and shoot the breeze – that was pretty special, pretty unique".



STAFF PROFILE: DR ROBIN BELL

Senior Registrar in Lameness and Imaging

You've recently arrived at the Faculty, how did you come to this position?

I graduated from Sydney University in 2000, completed an Internship here at the UVTHC in 2001, a residency and my ECVS boards at Massey University and have spent the

past few years working in the UK and the US. Most recently I ran the imaging and lameness service at UC Davis in California. I started here at the Equine Performance and Imaging Centre in January. My primary role is working with horses that experience lameness, particularly racehorses and performance horses like showjumpers, and that means working with a lot of the new equipment like the MRI, treadmill and nuclear scintigraphy.

How important are the new facilities at Camden?

MRI technology is still so new in horses. From a clinical research perspective, we can now identify new types of injuries and develop better diagnoses and treatment programs. We've published case reports on some of the more unusual fractures we've identified and have never been diagnosed before. The dual-head scintigraphy machine is unique and the most advanced piece of nuclear medicine machinery found in any veterinary institution in the world. These new facilities – the nuclear scintigraphy building, the MRI and the new treadmill – are truly world-class facilities.

In terms of treatment, what difference have the new facilities made?

Previously, there was nowhere in Australia that had the capacity to do MRI on horses. You found that MRI technology was under-utilised because vets didn't have access to the equipment or have the skills to use it. The Equine Performance and Imaging Centre at Camden is the only place in Australia that can now do this work. In the past, if a horse was injured they would be rested for a prolonged period of time, but with this new technology we can better diagnose the problem and set up treatment programs that can quicken the recovery period. My mission in this job is to promote the services we can now offer so that we achieve the best outcomes for horses.

They're relatively new facilities, what are the plans for the future?

At the moment we have a skeleton staff but this will grow as the program grows. In the first five months of this year we've already achieved three quarters of the caseload of 2009. We're conducting about two MRI's each week and two to three bone scans. The majority of the case load comes from inter-state and through internal referrals and part of my job is to build up the external referrals as well.



STUDENT PROFILE: KATHLEEN TSIMBAS

5th Year BVSC

Tell me about your work with the organisation Animal Management in Rural and Remote Indigenous Communities (AMRRIC)?

I started volunteering with AMRRIC last year. It's an organisation of veterinarians,

academics, health professionals and Aboriginal and Torres Strait Islander people that aim to improve the health and wellbeing of companion animals in Indigenous communities. Recently I went to Cotton Creek and Jigalong in Western Australia. We de-sexed and euthanised a lot of dogs and did animal health education with the communities. We try not to disrupt the communities too much so we usually stay with them for about three days.

What are the issues facing the Indigenous communities you've visited?

The Indigenous communities we go to are just so isolated so it's difficult to get access to veterinary services. A lot of what we do is education around animal health and welfare, providing services like immunisation and de-sexing, and medication like worming tablets. One of the biggest issues is dogs. Because many of the dogs haven't been de-sexed they breed freely. I think it's really important that those who don't have access to a veterinary clinic are still able to look after their animals. But it's not just veterinary services that are an issue. Some of the schools we've seen have only one teacher for the whole of K-12, it's difficult because people don't want to go and work in the middle of nowhere.

Do you think you'll keep doing the AMRRIC work once you've finished studying?

I hope so. I want to keep helping somehow. I get to travel and see our beautiful outback and wildlife. I get to meet different people from different walks of life and listen to their stories. I think Indigenous communities are disadvantaged and going out to these communities has been a real eye opener for me. While I don't think what I'm doing is a big thing, it is a small step. And it makes you realise that life is broader than just going to uni, doing the degree and becoming a vet. I think there's so much else you can do to help people.

You previously did a design degree, what made you move to veterinary science?

I found myself sitting in front of a computer all day and all night and I really wanted to work with something more tangible, more real. I like working with patients and owners and I love talking to people. But I'm really happy I've got the design degree because it allows me to think more laterally and I find that helpful. When I'm presented with a case knowledge is important, but a lot of the time it's also about common sense.



1: Castle Hill resident Alyce Brown with 'Norman' at the 'Family Fun Day', 2: Guests seated in MacLaurin Hall for a 'Night to Remember', 3: Rosalind Rothschild 1949 graduate with Zi Yi Lim (3rd year vet student) at the dinner.

CENTENARY CELEBRATIONS ROUND-UP

The weekend of 1st and 2nd May was full of excitement and festivities for the University of Sydney's, Faculty of Veterinary Science as it celebrated 100 years of excellence in veterinary teaching, care and research.

To mark this significant milestone, the Faculty of Veterinary Science hosted a series of celebratory events welcoming the community, alumni, former and present staff, students and friends of the Faculty.

VETERINARY SCIENCE FOUNDATION FABULOUS FAMILY FUN DAY

The 'Fabulous Family Fun Day' was organised by the VSF's volunteer VET Committee to raise the community's awareness of the Sydney Veterinary Teaching Hospital's new 24-hour, 7 days a week, Sydney After-hours Veterinary Emergency Service (SAVES). The event held on Saturday 1 May was a success with Sydney animal lovers, families and their pets arriving by the dozens to join in the fun and celebrate the Faculty achieving 100 years of veterinary excellence.

Kids were kept busy with face painting, balloon sculptures and a visit to the ice cream truck whilst parents browsed through the many pet stalls and lined up their pooch for a dog wash. Many

participated in tours of the state-of-the-art Veterinary Teaching Hospital while others were content to sample a variety of delicious treats that were on offer.

Pet owners took full advantage of the free pet health checks performed by final year veterinary science students under the supervision of the Hospital's qualified veterinarians.

A NIGHT TO REMEMBER!

Saturday evening's celebration included a black-tie reunion dinner, 'A Night to Remember - the School at the Foot of the Hill'. Held in the historic MacLaurin Hall, more than 200 alumni, former and present staff, and friends attended the event.

The night commenced with Master of Ceremonies Professor Paul Canfield introducing a video message from Professor Marie Bashir, Governor of New South Wales and Chancellor of the

University of Sydney. Professor Bashir holds a close affinity with the Faculty of Veterinary Science and sent her congratulations for accomplishing 100 years of excellence and her well wishes for a splendid celebration.

Dean of the Faculty of Veterinary Science Professor Rosanne Taylor welcomed guests and emphasised that the Faculty has reached this centenary milestone through the extraordinary and sustained efforts of alumni, staff, veterinary organisations and the Australian community.

Speakers included Professor Jill Trehwella, Deputy Vice Chancellor, Research; Todd Dewberry, President of VetSoc; Faculty of Veterinary Science graduates Dr Warwick Arden, Provost and former Dean of the College of Veterinary Medicine, North Carolina State University who spoke about the future of veterinary science from a global perspective and Dr Mark Lawrie, President of the Australian Veterinary Association who congratulated the



4: Prof Chris Goodnow, Don Parkin and Professor Jill Trehwella (DVC Research) enjoying cocktails and canapés before the dinner, 5: families attended the 'Back to the Roundhouse' Sunday BBQ, 6: Alumni Alan Jackson, Alan Donald, Rachel Cruz (Event Coordinator, VSF), Nancy Donald, Annette Holder & John Holder at the Sunday BBQ.

Faculty for its contribution to veterinary science in Australia.

Guests were treated to champagne and canapés in the Quadrangle on arrival and a sumptuous three course silver service dinner from European Catering. Each guest received a copy of the Faculty's Centenary publication "One Hundred Years of the School at the Foot of the Hill". Throughout the evening Professor Paul Canfield, assisted by Todd Dewberry presented a quiz designed both to tweak the memory and entertain. A historical timeline was on display, along with photographs of many of the alumni present on the evening. Between courses there was much mixing and mingling as old friends caught up.

The dinner was organised by the Veterinary Science Foundation with support from the Dinner Advisory Committee, Emeritus Professor Paul Canfield, Garth McGilvray, Geoff Scarlett, Phil Widders, Phil Brain, John Baguley, Corinna Klupiec, Katherine Briscoe and Todd Dewberry, who provided input into the dinner format and program for the evening, and to the students volunteers who acted as table hosts.

The Centenary Appeal, which seeks to raise \$500,000 to support the Faculty, was also launched on the night. Gifts of \$1,000 and over will be recognised on the Centenary Roundhouse Honour Roll. The Roundhouse, which has recently undergone a major restoration, was chosen as the symbol of celebration

for this Centenary and for our major gifts appeals. As we progress further into the 21st century it will continue to be a symbol and collection point, both in reality and virtually, for the stories and memories of our alumni, staff and friends. Visit sydney.edu.au/vetscience/Foundation

"BACK TO THE ROUNDHOUSE"

Sunday wrapped up the weekend celebrations with an informal "Back to the Roundhouse" gathering for all alumni, former and present staff, students and friends of the Faculty.

Throughout the day more than 300 guests of all ages visited the precinct and picnicked on the lawns with family and friends. Students from Vet Soc fired up the barbeque and manned the keg on the lawns beside the iconic Roundhouse. The anatomy labs were open for all to reminisce and tours of the current Sydney University Veterinary Teaching Hospital impressed graduates and former staff with its new state-of-the-art facilities.

Under sunny skies, the VSF captured video stories and memories, guests tasted the special Centenary Fundraising Wine series (which are available for order) and met up with fellow graduates and today's students alike. The last of the happy guests departed at 6.30 to attend a Class of 1969 dinner at The Grandstand.

EVENTS CALENDAR

28 July
JD Stewart Address
 Professor Christopher Goodnow will present "Immunology Veterinary Adventures on a Mouse Ranch" Webster Lecture Theatre, Veterinary Science Conference Centre, Sydney

Research Showcase
 Veterinary Science Conference Centre, Sydney

28 August
University of Sydney Pet Fair - meet celebrity vet Dr Chris Brown from Bondi Vet
 Vet precinct, University Veterinary Teaching Hospital Sydney

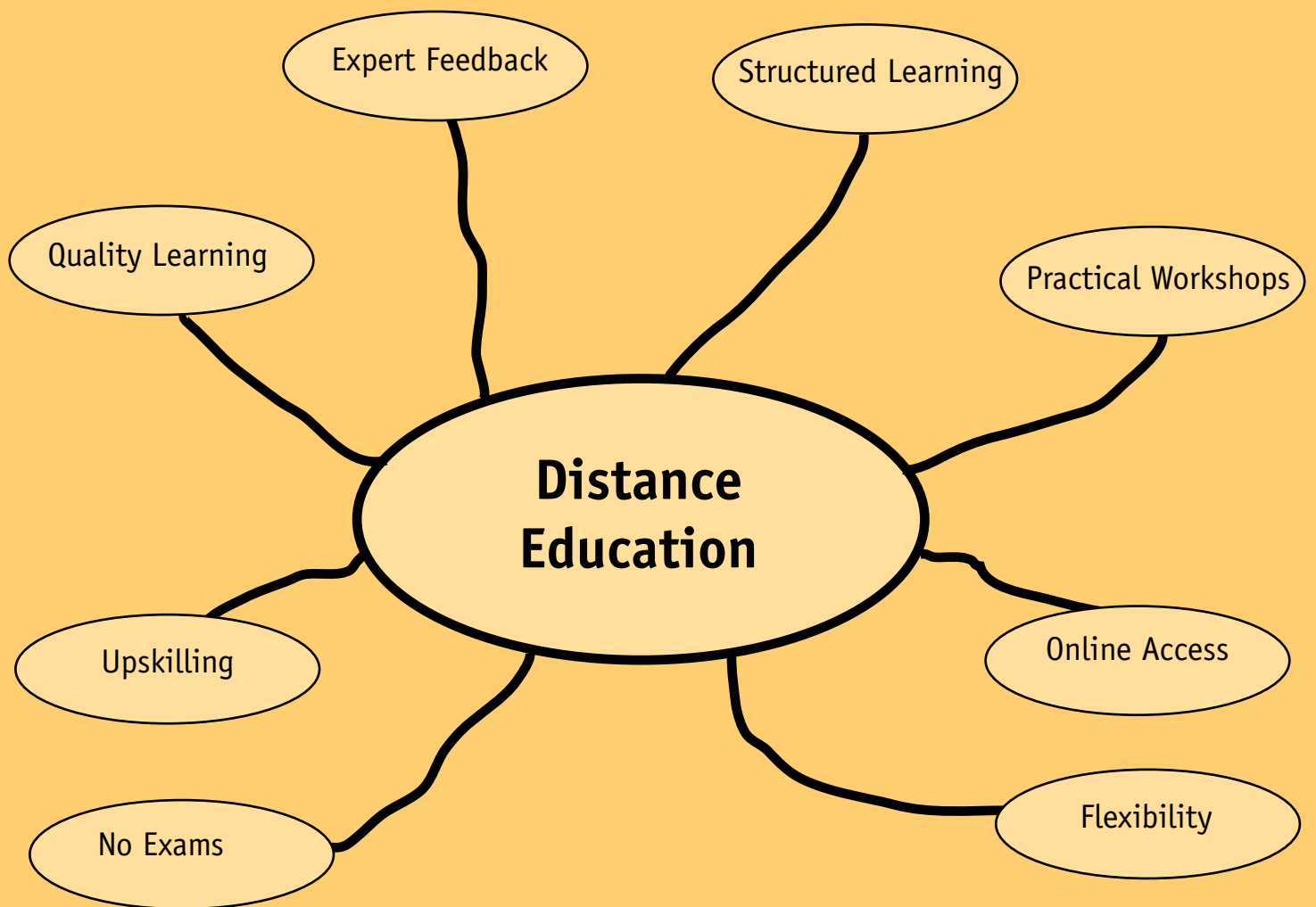
22 October
Animalia
 MacLaurin Hall, The University of Sydney

17 November
Ian Beveridge Memorial Lecture Professor John Edwards
 Webster Lecture Theatre, Veterinary Science Conference Centre, Sydney

17 December
First BVSc and Animal and Veterinary Bioscience combined Graduation
 Great Hall, University of Sydney

*For more information on the above events contact the Veterinary Science Foundation:
 T: 02 9351 8026
 E: vetscience.vsf@sydney.edu.au
sydney.edu.au/vetscience/Foundation*

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