

CSU Tails



CHARLES STURT
UNIVERSITY



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News from the CSU Veterinary Science Program

ISSUE 1 2008

IN THIS EDITION

- Students commence work in Veterinary Clinical Centre
- International research links with new professor
- CSU researchers investigate the key to improving results of artificial breeding
- A new veterinary surgical team



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FRONT COVER: Image courtesy of Joss Construction

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Thank you

The Charles Sturt Veterinary Science Foundation would like to acknowledge the support of new and continuing donors to the Veterinary Science program:



Dr Ted Whitem accepts a CSU certificate of appreciation on behalf of Jurox at the CSU Veterinary Clinical Centre's opening ceremony on 9 July 2008.

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- Yabtree West
- Yavenvale



From left: Mr Peter McGauran, Professor Kym Abbott, Chancellor Mr Lawrie Willett AO, The Hon. Bob Debus MP and CSU Vice-Chancellor Professor Ian Goulter at the opening of the Veterinary Clinical Centre.

Welcome from Head of School of Animal and Veterinary Sciences Professor Kym Abbott

The last edition of Tails was produced in spring last year and showed, on the front cover, a picture of the first sod being turned for the construction of the Veterinary Clinical Centre (VCC) on May 23, 2007. This edition of Tails has a picture of the completed building on the front, taken on the day the School took up occupancy of the facility on April 4, 2008. Three weeks later, the first small animal surgery was underway and, another week later, the equine clinic opened for business.

The planning and construction of the facility was, of course, a huge task but the result is outstanding. This piece gives me the opportunity to thank and congratulate all of those on the School staff and the wider University who made this facility a reality. It has been very exciting to see the result of many months of groundwork become part of our infrastructure, just as our leading cohort of undergraduate students commence their clinical training.

There are a number of functions to be fulfilled by the building, and all are critical to our program.

The first of these is training in equine medicine, surgery and anaesthesia, using the term medicine in its widest context to include diagnostic imaging and reproduction. The Equine Clinic and Hospital will provide the clinical case load, both first opinion and referral, to ensure our undergraduates are competent in a wide range of the most common equine veterinary conditions. The teaching spaces – multiple yards and crushes – provide first class areas for the development of skills in the equine diagnostic and therapeutic procedures that are fundamental for the veterinary graduate.

The second function is training in small animal medicine and surgery. The wards, treatment and preparation room and surgery provide an exceptional environment for animal care and student learning. Animals referred to our Centre for routine surgical procedures are treated by some of the most qualified veterinarians in the country, assisted by our senior veterinary students on their clinical rotations.

The third function is undergraduate and postgraduate training, clinical service and research in veterinary reproduction. The reproduction laboratory is adjacent to the serving barn and has a strong equine focus, but includes accommodation for farm animals and small animals as well.

Another important role for our new program, which has been embraced by all our staff, is to provide a centre for veterinary continuing education and professional interaction in the region – although we consider our region to be pretty large! It has been very fulfilling to recently host a number of professional meetings and I am sure our presence in the Riverina will continue to help the community of rural-based veterinarians grow in strength into the future.

Another development in the history of veterinary science at CSU is the creation of a new School – the School of Animal and Veterinary Sciences – as at 1 January this year. The separation from our friends in plant-based Agriculture is in name and management only; we remain co-located with their School and continue to do research together and teach into each other's courses. The new School of Animal and Veterinary Sciences delivers two undergraduate courses in addition to veterinary science – a Bachelor of Animal Science and a Bachelor of Equine Science, producing a suite of three strongly complementary courses, each one stronger for the sharing of staff, facilities and culture of the others.

And finally, our plans for the rest of the year. Building continues with construction of the Small Animal Clinic, to be located in central Wagga Wagga, and the Veterinary Diagnostic Laboratory, both commencing by the time you receive this copy of Tails. I look forward to providing some more details in our next edition.

Students rewarded for dedication to veterinary science

Nine Veterinary Science students have been rewarded for their dedication to their studies, communities and leadership through the Charles Sturt Foundation Scholarship Program.

The inaugural recipient of the A&K Gestier Scholarship, fourth year Veterinary Science student Alistair Grant, says "the money received from this scholarship will allow me to afford practical experience away from my home base in Wagga as well as assist in day-to-day living."

Veterinary Science scholarship recipients this year included: Alistair Grant (A&K Gestier Scholarship), Amy Dutton (J H Chalmers Memorial Veterinary Science Scholarship), Carla Goldman (Masterfoods – Petcare Scholarship), Sarah Sutherland (Redgate Poll Herefords Scholarship), Brooke White (Cowra Shire Council Scholarship), Jessica and Lauren Said (Tarcutta and Wantabadgery Merino Breeders Association Scholarships), Emma Liersch (The Rural Scholarship) and Lyndal Poritt (Tumut Shire Council Scholarship).

Charles Sturt University Veterinary Science students are also able to apply for assistance during their practical placements through the Charles Sturt Veterinary Science Foundation's Professional Experience Scholarship Program. The program provides financial assistance to students who move away from the Campus and their home town to complete the practical placement component of the course. The newest donor to the program, Coopers Animal Health, will be providing 10 Professional Experience Scholarships valued at \$875 each for the next three years to support students during this time.



CSU Veterinary Science students and donors at the 2008 Scholarship Ceremony in Wagga Wagga.

Students commence work in Veterinary Clinical Centre



Veterinary Science students at Charles Sturt University have undertaken their first classes in the new Veterinary Clinical Centre on the University's Wagga Wagga Campus. The Veterinary Clinical Centre, which was completed in April 2008, enhances students' hands-on learning through the use of state-of-the-art equipment in specialised rooms including:

- surgical suites for horses and small animals
- sophisticated imaging facilities featuring the latest in computerised radiography, digital endoscopy and diagnostic ultrasound
- a reproduction laboratory and barn
- offices and tutorial spaces
- a hydraulic tilt table for bovine surgery.

The unique building has been designed to minimise the environmental impact of its activities. Each space is bathed in natural light, minimising the need for artificial heating and cooling and the northern veranda protects the building from Wagga Wagga's hot summer sun. Water from the building's rooftop is collected and pumped to a holding tank which is used to sustain the surrounding gardens.

Director of the Clinic, Associate Professor Bryan Hilbert, said the students have embraced the learning opportunities that the Veterinary Clinical Centre provides.

"The essence of good clinical teaching is to give students the opportunity to work with real clients and real cases under the supervision of expert staff," he said.

"As a teacher, it is wonderful to see the enthusiasm on the students' faces as they enter the facility and the enjoyment they gain from learning about a new piece of equipment or technique.

"Without a facility like the Veterinary Clinical Centre, you can only explain certain procedures and equipment. Now, with the first cohort of students entering the clinical phase of their course as the new Centre opens, it is wonderful to give them these hands-on opportunities.

"Fourth, fifth and sixth year veterinary science students will be trained using industry leading imaging equipment including a high output x-ray machine capable of penetrating a horse's lumbar spine or pelvis; computerised radiography system; high performance ultrasound machine, and video and treadmill endoscopy."

According to fourth year Veterinary Science student Megan Kelly, the new Clinic will be an important place to gain the clinical skills needed in mixed practice.

"The Equine Clinic is certainly a facility I hope to benefit from as this is an area I would eventually like to specialise in," she said.

"Gaining confidence with horses and being able to experience a range of cases and surgeries before graduation will definitely help to improve our skills and knowledge.

"As a referral service, the Clinic will expose us to a specialised case load which is a real bonus to our learning."

Professor Peter Chenoweth, responsible for the reproduction laboratory and associated teaching and clinical areas, said the reproduction facilities have been specifically designed to accommodate reproductive procedures in both male and female animals including artificial insemination, semen evaluation and freezing, and embryo transfer.

"There is a particular emphasis on equine reproduction, including stallion and mare infertility evaluations, but we have the capacity to work with a wide range of domestic species," he said.

"After visiting many reproduction laboratories both in Australia and overseas, I believe we have developed a highly functional environment that facilitates student learning as well as relevant research and provides a valuable resource for the Riverina region."

Although the Veterinary Clinical Centre is now open for use, there are a number of items that would benefit student learning and research but are not available due to funding constraints. If you would like to make a donation to this facility, please contact the Charles Sturt Veterinary Science Foundation on (02) 6338 4680.

The Veterinary Clinical Centre was officially opened by Minister for Home Affairs, The Hon. Bob Debus MP, on 9 July, 2008.

The facility is open as a veterinary hospital for referral cases and as a first opinion clinic for equine cases. To book an appointment or for more information, please phone (02) 6933 2604 between 9am and 4pm Monday to Friday, or email vcc@csu.edu.au

International research links with new professor

A former senior academic at the University of Sydney, Professor Peter Wynn has joined CSU with an active research program in dairy cattle production and extension in Pakistan, funded by the Australian Centre for International Agricultural Research (ACIAR).

Professor Wynn has been appointed to the joint McCaughey Memorial Institute - CSU Chair in Animal Production. The position is funded by a \$600,000 donation from McCaughey Memorial Institute towards veterinary science programs at the University.

Announced in late 2007, the Institute's donation marked the largest single financial contribution to CSU's Veterinary Science program, which was established in 2005.

Professor Wynn was an Associate Professor at the University of Sydney after being a senior CSIRO research scientist, with research interests in the physiology of the stress response and the hormonal regulation of body composition, wool fibre growth and lactation.

He is currently leading the ACIAR project in Pakistan that aims to increase dairy production by improving training and extension services to smaller dairy farmers.

According to Professor Wynn, these farmers are dependent almost solely on an income from three to eight buffalo or cows to support their families, with little outside help.

"This project will lead to substantial improvements in the way important technological advances are established in small-holder production systems," he said.

"In many cases the relevant science is not new, but the methods of promoting adoption of the science are innovative. Underlying the approach is a rigorous analysis of the major impediments to improved



CSU researcher Professor Peter Wynn has been appointed to the joint McCaughey Memorial Institute - CSU Chair in Animal Production, based in Wagga Wagga.

productivity which, we anticipate, will lead to the implementation of training programs for Pakistani University students at CSU."

Another project Professor Wynn brings to CSU relates to improving the efficiency of the Australian pig industry through the Pork Cooperative Research Centre, which CSU now supports as an Associate Partner. The work will be conducted in collaboration with some of Australia's largest pig producing companies located in the Riverina region of NSW.

"One major aim of this new Chair is to build stronger links between the animal production community of our region and key research groups through the University's and NSW

Department of Primary Industries' EH Graham Centre for Agricultural Innovation, as well as CSU students enrolled in the new Animal Science and Veterinary Science programs," Professor Wynn said.

"These links are vital in achieving our goals of producing the practically oriented graduates that our animal industries require, enabling them to continue to increase production efficiencies and remain competitive in our global economy.

"The Riverina is uniquely placed to meet the demands of this training program because it is home to so many of the key animal industries including the dairy, wool, meat and poultry industries."

"One major aim of this new Chair is to build stronger links between the animal production community of our region and key research groups through the University's and NSW Department of Primary Industries' EH Graham Centre for Agricultural Innovation, as well as CSU students enrolled in the new Animal Science and Veterinary Science programs." Professor Peter Wynn

CSU researchers investigate the key to improving results of artificial breeding in mares



CSU researcher, Dr Scott Norman studies methods for controlling the reproductive cycle of the mare.

Studies at Charles Sturt University's School of Animal and Veterinary Sciences are looking at improving methods for controlling the reproductive cycle of the mare. Tight control of the reproductive cycle is necessary if advanced horse-breeding technologies such as embryo transfer, oocyte transfer and frozen semen insemination are to produce good results that are repeatable and economical.

While most current techniques used for controlling the mare reproductive cycle depend on manipulating the corpus luteum and the hormone it produces (progesterone), CSU researcher, Dr Scott Norman and PhD student Jenni Larsen believe the secret to tight ovulation control lies in a deep understanding of ovarian follicular dynamics and developing methods to control follicle development throughout the cycle.

Control of the reproductive cycle of the mare is an essential requirement for the implementation of advanced artificial breeding technologies in the horse. Serious efforts to synchronise oestrus and ovulation in the mare date back to the 1940s. Despite almost 70 years of research, there are currently no practically useful techniques to synchronise ovulation in the mare. With this in mind, Senior Lecturer in Veterinary Reproduction in CSU's School of Animal and Veterinary Sciences Dr Scott Norman, and PhD student Jenni Larsen have embarked on a three-year Rural Industries Research and Development Corporation (RIRDC) funded project

with the overall aim of developing a novel and practical protocol for the synchronisation of oestrus and ovulation in the mare.

Mares usually cycle during the summer months and within this breeding period they have an oestrous cycle of 21 days. In this 21-day period, mares are in oestrus (the sexually receptive phase during follicular development) for approximately six days. Currently it is not possible to accurately predict the day that the mare will ovulate. This means that in a randomly cycling group of mares, individuals can ovulate over a 21-day period making the scheduling of breeding, or the coordination of recipient mares for the acceptance of an embryo from a donor mare difficult. According to Dr Norman, ovulation synchronisation is defined as using a treatment protocol involving drugs and hormones to induce a group of mares to ovulate within 72 hours of each other, or alternatively, the ability to schedule an individual mare to ovulate within a predicted 72 hour period.

Ovulation synchronisation is essential if artificial breeding technologies such as frozen semen insemination, embryo transfer, and oocyte transfer are to become efficient, cost effective and reliably successful procedures.

While artificial breeding procedures can still be performed using current cycle control methods, the need to build redundancies into the system to make up for the lack of precise control over ovulation increases the expense associated with using advanced breeding technologies. These redundancies can take the form of requiring more mares as embryo transfer recipients to ensure there is at least one at a suitable stage of the cycle to accept an embryo, or an increased labour requirement to check mares at close intervals to ensure insemination is performed at the correct time. The need for redundancies can add considerable expense to the artificial breeding of horses and tight control over ovulation has the potential to significantly reduce these expenses.

With the need for a more precise method for ovulation control identified, a comprehensive review of the literature was performed that confirmed that, while there is a considerable understanding of follicular dynamics throughout the mare reproductive cycle, there is little knowledge of suitable methods for controlling follicular growth and development with a view to achieving ovulation synchrony. In particular, it is apparent that many of the current protocols arose more from trial and error in clinical situations rather than being designed using a sound understanding of the pharmacological effects of the drugs on follicular development.

A review of relevant literature from other species identified some possibilities for follicular control in the mare which had not previously been explored. Coupling this information from other species together with current knowledge of the pharmacological and endocrinological actions of some recent drug developments has enabled the development of novel synchronisation protocols for use in the mare. Importantly, one drug delivery method used in this study decreases the need to give injections to mares as is required in other protocols.

Unlike other studies, this project is monitoring the effect of treatments from a week prior to the commencement of treatment, to the second ovulation after the completion of the treatment protocol. This means that mares are being monitored for a period of approximately 40 days. Most previous studies have only monitored mares from the completion of treatment to the time of the first ovulation. It is anticipated that the extended monitoring protocol will allow a thorough understanding of how the treatment influences follicular dynamics over the whole reproductive cycle.



It is expected that there will be three discrete outcomes from this study. Firstly, there will be a deeper understanding of the influence the stage of follicular wave development at commencement of synchrony treatment has on the subsequent timing of ovulation post treatment. The hypothesis to be investigated is that ovulation can be synchronised, or predicted, if groups of mares are at the same stage of follicular development at the commencement of treatment.

Secondly, there will be a deeper understanding of the influence of progesterone and oestrogen on the follicular dynamics of the mare.

The hypothesis to be investigated is that treatment of mares with progesterone and oestrogen for 10 days resets the follicular wave pattern. Follicular dynamics will be investigated using ultrasonography before, during and after treatment.

Thirdly, from the results of the

literature review and preliminary trials, it will be possible to identify drug combinations and administration regimens likely to provide control over follicular dynamics and result in ovulation synchrony. Drug selection and administration protocol can be based on the theoretical effect of the protocol on follicular wave patterns, with the goal of bringing all mares to the same stage in the follicular wave at the commencement of treatment.

Preliminary results to date have supported the hypothesis that, in order for ovulation synchronisation to be achieved, the follicular waves in a cohort of mares need to be synchronised so that all mares have follicles at a similar stage of development at the completion of the treatment.

The researchers are particularly excited by the opportunities provided by this research as the results will have immediate practical application to the equine breeding industries that allow the use of advanced artificial breeding technologies.

The researchers are also pleased that this work will be one of the first studies to make use of the new equine teaching and research facility recently completed at the Wagga Wagga Campus.

CSU Study of Ovulation Synchronisation in Mares

Aims

- Evaluate current knowledge on follicular dynamics during the oestrous cycle in mares
- Identify treatment protocols for the synchronisation of ovulation in mares based on an understanding of the pharmacology and endocrinological action of the drugs
- Field-test selected protocols to evaluate their ability to control follicular dynamics and synchronisation in mares.

Hypotheses

Ovulation can be synchronised, or predicted, if groups of mares are at the same stage of follicular development at the commencement of treatment.

Treatment of mares with progesterone and oestrogen for 10 days resets the follicular wave pattern and provides synchronisation of ovulation in mares.



A new veterinary surgical team at CSU

Staff of the new School, in late 2007



A commitment to train a new generation of veterinary scientists for practice and research has led a number of internationally experienced clinical veterinary specialists to Charles Sturt University.

Professor of Small Animal Surgery Bruce Christie, Associate Professor of Equine Medicine and Surgery Bryan Hilbert, Associate Professor of Equine Surgery Ken Jacobs, Senior Lecturer in Veterinary Anaesthesia Dr Leigh Ladd and Senior Lecturer in Veterinary Reproduction Dr Scott Norman represent the first clinical appointments for the Bachelor of Veterinary Science at CSU's Wagga Wagga Campus.

"This group of experienced specialists brings a broad range of clinical expertise to CSU and forms the basis of our clinical service and teaching," says Professor Kym Abbott, Head of School.



Associate Professor of Equine Medicine and Surgery, Bryan Hilbert

A desire to repeat his experiences of the late 1970s in establishing the equine hospital at a new veterinary school in Western Australia led Dr Bryan Hilbert to CSU in 2007.

"My stay in WA was an exciting and extremely rewarding time in my career and the opportunity to repeat this experience was very attractive," Dr Hilbert said. "I look forward to being one of the team that successfully launches the veterinary teaching program at CSU, especially in equine medicine and surgery."

His task is indeed a significant challenge as Dr Hilbert joins CSU to establish and lead its new Veterinary Clinical Centre on Wagga Wagga Campus. He is, however, excited by the commitment of the University to create an outstanding centre for equine clinical service, research, undergraduate and postgraduate learning.

With interest in all facets of equine surgery, Dr Hilbert is particularly interested in equine lameness and related surgery, abdominal surgery and surgery of the upper respiratory tract in performance horses.

Dr Hilbert was Professor in Large Animal Surgery at the University of Minnesota, USA in the mid 1980s, foundation staff member of the Murdoch University program in Western Australia in the late 1970s and ran his own equine surgical referral hospital in Western Australia for two decades. Dr Hilbert has also worked as a lecturer and equine surgeon at universities in the USA and Ireland as well as in private practice in Germany and at the Singapore Turf Club.



Professor of Small Animal Surgery
Bruce Christie

With his sights firmly set on 2010 when the first group of CSU Veterinary Science students are due to graduate, Professor Christie brought his extensive experience in performing and teaching surgery to the University in 2007. As well as being involved in significant research into the development of vascular grafts, Professor Christie has been developing educational media for undergraduate and postgraduate training in veterinary surgery and has

conducted seminars in surgery for practitioners in Israel and Germany. He also continues to work as a small animal surgeon.

"I am still passionate about learning and teaching veterinary surgery after 41 years of performing and teaching in six different veterinary schools in Australia, USA, Israel, Malaysia and the West Indies," Professor Christie said.

"I was keen to be involved in what CSU is doing by embarking on an innovative program of problem based learning with the focus on the learner rather than the tutor.

"On the technical front, I want to see minimally invasive surgery become a strength of CSU graduates."

With CSU being a leader in distance education, Professor Christie has an interest in small animal surgery and aspires to create a virtual veterinary school as a step towards global access with equity in veterinary learning.



Associate Professor of Equine Surgery Ken Jacobs

Associate Professor Jacobs hails from the ACT where he has been a partner in the Canberra Veterinary Hospital for many years. His teaching and research interests include wound healing and lameness in horses and equine surgery. Since joining CSU, Professor Jacobs has been part of the team involved in the design of the Veterinary Clinical Centre on the Wagga Wagga Campus.

"The new CSU facilities and Problem Based Learning (PBL) program will offer the students an opportunity to become excellent all-round veterinarians, as well as equine practitioners," Professor Jacobs said.

"With the new facilities, CSU veterinary students will be able to undertake hands-on practical experience. This will be enhanced by the information technology services in the new facilities allowing students to closely observe different procedures performed by CSU veterinarians.

"I am delighted to be involved with such an innovative and practical program. After a number of years in practice, I believe I have a good understanding of the day-one skills a new graduate requires, and this appointment allows me to contribute to the education of the next generation of veterinarians while continuing my passion for equine clinical work."



Senior Lecturer in Veterinary Anaesthesia Dr Leigh Ladd

An ability to move between anaesthetics for humans and animals has been the backdrop for the career of Dr Leigh Ladd. He has 14 years experience in anaesthetic and surgical research as the Senior Scientist in the Departments of Anaesthesia and Pain Management and Cardiology at Royal North Shore Hospital in Sydney. He has tutored and lectured in veterinary anaesthesia at the University of Queensland and University of Sydney.

Dr Ladd's research includes work into adult stem cells, cardiothoracic surgery, cardiac device development, hyperperfusion and the characterisation and reduction of anaesthetic toxicity.

A philosopher and ethicist, Dr Ladd has served for a decade on NSW's Animal Care and Ethics Committee. He also consults in anaesthesia and cardiothoracic surgery for human surgical training and research.

"My great passion for teaching and CSU's commitment to research led me to risk terminating valuable research work in Sydney and commit to this institution without reservation," Dr Ladd said.

Dr Ladd said.

"I am excited about the prospect of combining new teaching methods with established ones to produce outstanding graduates.

"We have a perfect opportunity here to bring high standards of healthcare into veterinary teaching to equip graduates for very high standards in rural work.

"The standard of veterinary care in rural Australia is remarkably high and we intend that our graduates will contribute substantially to the continuation of that trend."



Senior Lecturer in Veterinary Reproduction Dr Scott Norman

Following a successful teaching career in the veterinary program at the University of Queensland, Dr Scott Norman moved to CSU Wagga Wagga Campus in 2007. He has worked in clinical practice in Queensland, including a period as Registrar at the Pastoral Veterinary Centre in Goondiwindi.

Dr Norman undertook his residency training in Theriogenology at the University of Florida in the USA between 1986 and 1988. He is a Diplomat of the American College of Theriogenologists and completed his PhD in 2002 in bovine reproduction. Dr Norman is an active bovine and equine practitioner with particular interests in reproduction.

"I was attracted to the CSU veterinary science program due to its focus on providing veterinarians to service the rural industries," Dr Norman said.

"It is a once in a lifetime opportunity to be involved in the development of the curriculum and facilities of the new veterinary school from the ground up.

"I feel I can bring a suitable mix of clinical and academic experience to the position with the goal of producing practical veterinarians while maintaining the 'science' in veterinary science."

Darwin and Livestock Reproduction Behaviour

- a public lecture



By Peter Chenoweth
Professor of Veterinary Reproduction,
School of Animal and Veterinary
Sciences, EH Graham Centre for
Agricultural Innovation

In 1859, Charles Darwin published "The Origin of Species by Means of Natural Selection: Or, the Preservation of Favoured Races in the Struggle for Life". Here he described the means by which surviving (and reproducing) species have prevailed due to 'superior' attributes. Although many of these observed attributes were physical in nature, Darwin forecast that the new science of

'psychology' would reveal its own litany of evolutionary traits which have enhanced survival.

Building on this premise, Frank Beach, of Stanford University, described behavioural 'building blocks' within the animal kingdom, which could be traced back to simpler organisms. A number of these 'building blocks', which are discernable in today's livestock species, can be incorporated into management systems to benefit both animal welfare and production.

Examples include:

- Most of our livestock species evolved as 'prey animals'. Thus they have their own 'personal space' and prefer to move in groups within visual contact with each other. Modern handling systems utilising curved, solid-side races depend upon this principle to move animals more quietly and easily.
- Cattle groups are patriarchal and hierarchical, with bull dominance becoming more acute once physical maturity is attained (generally > 3.5 years of age). Thus, it is usually more effective to ensure that multi-bull mating groups are relatively young and homogenous.

- Cattle have evolved as a 'calving-ou' species. Here, the mother prefers to give birth in a relatively secluded location, where the calf remains for several days. During this period, the calf suckles, sleeps and bonds with its mother. Disruption of this routine can cause stress and reduced immuno-competence, leading to increased calfhood disease and loss.
- In some species, the male effect, or biostimulation, is well established. Here, a good example is the ram effect, whereby rams are introduced to transitional females at the start of the breeding season to stimulate and synchronise cycling. This effect also exists to a lesser degree in most livestock species. The challenge is to effectively harness this phenomenon to expedite breeding programs, including those requiring oestrus synchronisation.

These few examples illustrate the potentially beneficial interactions between innate behavioural building blocks and livestock management. Increased knowledge and exploitation of these evolutionary behavioural foundations should benefit both livestock welfare and production.

AVA meets at CSU

By Associate Professor John Glastonbury

A recent meeting of the Riverine Branch of the Australian Veterinary Association (AVA) provided a wonderful opportunity for Charles Sturt University to show off its state-of-the-art facilities for the teaching of veterinary science.

Twenty-three veterinarians from Hay to Tumbarumba and Wodonga to Wagga Wagga attended the meeting held April in the Veterinary Pre-Clinical Centre.

Members were welcomed to the University by Head of the School of Animal and Veterinary Sciences Professor Kym Abbott who outlined CSU's plans for clinical training of veterinary students. Professor Abbott gratefully acknowledged the vital role that members of the Branch were playing in training of students.

The highlight of the afternoon was a tour of the recently completed Veterinary Clinical Centre, which was conducted by the Clinic Director, Equine Surgeon Associate Professor Bryan Hilbert. Local veterinarians

were extremely impressed by the facilities and the potential for the Centre to play a major role in advancing veterinary science in the region.

The tour of the Centre included an enthusiastic display of the new Reproduction Laboratory from Professor Peter Chenoweth, who leads the Theriogenology group at the School.

Charles Sturt University is keen for the new veterinary facilities, staff and students to become the centre for future activities of the Riverine Branch, a role formerly adopted by the DPI's Regional Veterinary Laboratory until it closed 10 years ago.

The School's veterinary staff have encouraged this by their election to significant positions in the Branch Committee; Associate Professor John Glastonbury is now President, Dr Martin Combs Secretary/Treasurer and Professor Peter Chenoweth to the Continuing Education Committee.

Student profile: Sarah Anne Charlton

Full Name:

Sarah Anne Charlton

Age:

27

Home Town:

Canberra

Year of study within the Bachelor of Veterinary Science:

4th year

**Why did you choose to study veterinary science at CSU?**

I chose CSU because it's course focuses on more than just academia. CSU recognises that you need to be able to communicate to your clients as well as fix their animal. This course is daring to be different and not afraid if the other "older" kids laugh at it. I like that!

What made you want to be a vet?

I get the feeling this story is not going to be funny on paper but here it goes: I grew up on a small farm and collected every animal under the sun, except a pig. I always wanted a pig but Mum wouldn't let me. When I was six, we took my cat to the vet to be spayed only to find out she was pregnant (again). The vet knew I was a bit weird and inquisitive so he kept the unborn kittens in the fridge for me so I could look at them. I thought it was the best thing ever and decided that I too wanted to be able to keep kittens in a fridge to show other weird kids like me. I told that story to the interview panel when I came to CSU and, four years later, here I am. I guess they were once weird kids too!

What is your favourite aspect of the veterinary science program at CSU?

The focus and importance placed on rural practise and herd health, and the fact that we were getting our hands dirty right from the start.

What are you looking forward to after graduating?

Starting the next phase of my life with my soon to be husband, (who is also a 4th year vet student). I have no doubt we have a few adventures ahead of us, hopefully abroad.

What inspires you professionally and personally?

In my professional life I would have to say the memory of Dr David Banks, a family friend and inspiration to the veterinary profession. He was a driving force behind Biosecurity Australia, an incredible scientist and a wonderful human being. Unfortunately, I did not realise the enormity of his achievements and service to the veterinary profession until after his untimely death.

In my personal life, I would have to say my Mum. She has always encouraged me to be myself and doesn't mind that I talk too much.

Explain your role in the Veterinary Students Association.

The Veterinary Students Association was formed in my first year at CSU and I was the founding President. In that first year we got together as a class and decided that it would be nice to have an association that focused on student needs including equipment and text books, as well as enable us to get together as a group

in a social manner through trips to visit veterinary practices and events like the Vet Ball. It has been nice to see that in the four years since we started, many veterinary based companies are now starting to offer our students support, as they are quickly realising that CSU students are just as valuable as those studying through the more established veterinary programs.

What is your biggest achievement?

I never dreamt that I would manage to be accepted in to the Veterinary Science program at CSU, let alone make it this far through the course. Now that the light is at the end of the tunnel, the enormity of this achievement is starting to become very real.

Are you hoping to specialise in a certain area once you have graduated?

At this stage I have a number of interests, but would have to say biosecurity with a focus on the pork industry would be the direction I would like to investigate further.

Where do you see yourself in 10 years?

With about six kids, a small farm and a job at the pointy end of Biosecurity Australia.

What is your ultimate career goal?

Chief Veterinary Officer of Australia. I might have to get a nanny!



Illustration by Jan Austin (Inland by Hand)
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