

How CSIRO has Refocussed its Animal Research for Bigger Impact

Hosted by



Thursday 7 May 2015

3.30pm to 5.30pm \$15/ticket

James Lawrence Pavilion - Gallagher Livestock Manager Room

Seminar synopsis:

CSIRO has a long tradition of supporting the Australian beef industry. With a major restructuring in CSIRO we have taken the opportunity to build stronger and more effective linkages with other R, D and E providers, refocus our research towards the big challenges facing the industry and work more closely with industry stakeholders. This seminar will provide a taste of how our recent research is benefiting the beef industry as well as outlining our research strategy going forward.

Beef research in CSIRO – a new era

Presentation by Dr Drewe Ferguson, Program Leader Productive and Profitable Livestock, CSIRO
The Agriculture Flagship brings all agricultural research in CSIRO under one roof. In so doing we are able to integrate our expertise to address the key research questions affecting profitability of the beef industry.

Live export – the latest

Presentation by Dr Drewe Ferguson, Program Leader Productive and Profitable Livestock, CSIRO
With so much of the beef industry reliant on live export, Dr Ferguson will discuss the current and future welfare challenges and the research CSIRO has done to address these challenges.

Alleviating pain for productivity gains

Presentation by Dr Alison Small, Senior Research Scientist, CSIRO (Armidale)
Pain in livestock affects production and is also a potential threat to market access. New methods of pain alleviation are more effective and readily applied under production conditions.

Information technology and herd management

Presented by Dr Greg Bishop-Hurley, Research Scientist, CSIRO (Brisbane)
With the rollout of the NBN to the bush expected in the next couple of years, technologies are being developed now that will assist producers in the management of their herd and property. Greg will showcase some of the leading examples that can have ready application on your property.

The Digital homestead project – where to from here?

Presented by Margie Atkinson, QDAFF and James Cook University
The Digital Homestead project is a CSIRO, QDAFF and JCU collaboration that has explored, with input from industry, the integration of on-farm digital tools. Information gathered is presented to producers via a single, user-friendly web page that helps in managing on-farm activities and connecting more effectively with markets. Working with industry to roll out the 'Digital Homestead' is the next important step.

Managing the rumen for productivity

Presented by Dr Stu Denman, Senior Research Scientist, CSIRO
The rumen microbes are responsible for the conversion of feedstuffs to energy and protein products that the animal can utilize. Optimized manipulation of the microbes and their fermentative pathways under varying production systems will allow for efficient feed conversion and nutrient retention to the animal.

Methane, myths and methods

Presented by Dr Nigel Tomkins - Senior Research Scientist, CSIRO (Townsville)

The contribution of methane to total emissions from the agricultural sector continues to be a contentious issue. Direct measurements across northern Australia at the herd scale suggest that current national inventories are too high.

Heat stress

Presented by Dr Gene Wijffels, Principal Research Scientist, CSIRO (Brisbane)

There is a lot of uncertainty about the effects of heat stress on productivity. Gene's current research, in collaboration with University of Queensland and overseas collaborators is unravelling the relationship between heat stress and gut and liver damage that affects morbidity and mortality following extreme heat load.

Reproduction and genomics – what's in it for the industry?

Presented by Dr Sigrid Lehnert, Chief Research Scientist, CSIRO (Brisbane)

The reproductive performance of beef herds is an important issue for the industry, and genetics plays a role. This talk will give a flavour of how CSIRO is using cutting-edge DNA technology to tailor solutions for Australia's northern beef herd.

Bio – Dr Drewe Ferguson



Dr Drewe Ferguson is the Leader of the Productive and Profitable Livestock Program in the new Agriculture Flagship. He has had several leadership positions in CSIRO and is a former Deputy CEO of the CRC for Beef Genetic Technologies. His research interests began in meat science where he has made a significant contribution to the improvement in beef eating quality through his involvement in the establishment of Meat Standards Australia (MSA), the world's first beef eating quality grading system. Since 2002, his interests have included animal welfare and behaviour where he developed a leading research group which has gained both national and international recognition for its science and role as trusted advisors in the development of national policy and standards governing animal welfare. In recognition of his high level of expertise and critical role in animal welfare science in Australia, Dr Ferguson was invited on the Animal Health Australia co-ordinated expert reference and writing groups formulating new National Standards and Guidelines for Australia's livestock industries.

Bio – Dr Alison Small



Dr Alison Small graduated as a veterinarian and spent 12 years working in mixed, mainly livestock practice. She completed her PhD with the University of Bristol, UK, on the spread and control of foodborne pathogens in the lairage. Since January 2006, she has been working for CSIRO, first at Food Science Australia, QLD as a Research Scientist and Meat Industry Adviser. During this time, she led research on the impact of Halal slaughter and stunning on welfare and meat quality. In July 2010, she transferred to CSIRO Livestock Industries in Armidale, NSW, and is currently working on pain mitigation solutions for livestock.

Bio – Dr Greg Bishop-Hurley



Dr Bishop-Hurley was born and raised on a mixed cropping farm in North Canterbury on New Zealand's South Island. He was educated in New Zealand where he also worked in extension management decision support systems. Following a PhD in grazing management systems for dairy cattle he spent time at University of Missouri working with producers to increase profitability of pasture-based dairying. Dr Bishop-Hurley joined CSIRO in 2003 where he has worked on information technology solutions for the northern cattle industry. He is leading research in the area of precision livestock management, developing the systems to remotely monitor and manage livestock and their environment. The research is focused on developing novel technologies, methodologies and delivery mechanisms to improve the productivity and sustainability of the system.

Bio – Margie Atkinson



Margie Atkinson was raised in a family whose focus was agricultural systems – including production horticulture, biosecurity research and agricultural training. She has an MSc in Marine Ecology and Fisheries, specialist knowledge in fisheries, aquaculture and natural resource management, plus experience as a communicator, facilitator and change manager across agricultural sectors more broadly. In the last decade she has had extensive experience working across both Federal and QLD State governments, together with universities and industry to collaboratively improve governance, profitability and sustainability outcomes for primary producers.

Bio – Dr Stuart Denman



Stuart Denman is a researcher within the CSIRO Agriculture Flagship. He received a PhD in molecular microbiology from Griffith University/CSIRO investigating the cellulolytic enzymes from rumen anaerobic fungi. He then spent 4 years in Stockholm at the Royal Institute of Technology studying the molecular aspects of fibre formation and modification in plants. Since returning to CSIRO in early 2002 he has been involved in projects that use molecular methods to detect and monitor key microbial populations within the rumen to improve productivity and reduce environmental impacts. As a microbial/molecular biologist he is involved in diverse projects including enhancing fungal populations in the rumen, rumen detoxification and methane abatement strategies.

Bio – Dr Nigel Tomkins



Following a career in teaching Agriculture, Nigel undertook a PhD at University of Queensland before moving to CSIRO where he has worked in a variety of areas relating to the northern cattle industry. He was among one of the early pioneers of greenhouse gas research and identified anti-methanogenic compounds to reduce methane emissions from cattle in the early 90s. Following several years understanding the interactions between cattle and their environment to improve both pasture and cattle productivity, Dr Tomkins again returned to GHG research where he has pioneered methods to accurately measure methane emissions from cattle grazing extensive pastures across northern Australia.

Bio – Dr Gene Wijffels



Dr Gene Wijffels trained as a clinical immunologist and biochemist and she was quickly attracted to a research career in animal agriculture where she has worked on a diversity of subjects including the application of “omics” technologies to livestock production and disease. She is currently leading a new \$6M 5-year MLA funded project on inflammation in heat stress with collaborations in UQ, USA and Italy.

Bio – Dr Sigrid Lehnert



Sigrid Lehnert's science career builds on expertise in gene expression, developmental genetics and reproductive biology. Since joining CSIRO, Sigrid's research has focused on the application of genetics and reproductive biology to production animals. She developed transcriptomics approaches to the study of production animals during Beef CRC II and III. She is currently leading the Livestock genomics group at CSIRO's Agriculture Flagship.

For more information:

www.csiro.au