S E N T I N E L

Australian Biosecurity CRC for Emerging Infectious Disease

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FROM THE CEO

Dr Stephen Prowse

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Established and supported under the Australian Government Cooperative Research Centres Programme

FROM THE CEO

Dr Stephen Prowse

May Board meeting

The Governing Board of the AB-CRC met in May in Melbourne. The meeting was held the day prior to the International Advisory Standing Committee meeting so that the members of both committees could meet.

Project reports were the main issue discussed by the Board. These reports were well received, with a number of suggestions for improvement that will be conveyed back to the project leaders. The Board asked me to provide a one paragraph synopsis for each project for members to use within their own organisations. The Board members also approved the *Commercialisation and Utilisation Plan* that is to be presented to the Australian Government Department of Education, Science and Training in June. The plan includes a summary page for each project that discusses its commercial prospects. It was suggested that this one page project summary be included in the project review documentation that is sent to project leaders. The Board also considered and approved the budget for 2005/06.

Standing, left to right:
Prof Gardner Murray (Chief Veterinary Officer), Prof John Mackenzie (AB-CRC/Curtin University of Technology), Prof Tony McMichael (National Centre for Epidemiology and Population Health, Australian National University), Prof Peter Daszak (Consortium for Conservation Medicine, USA), Prof Jane Cardosa (Universiti Malaysia, Malaysia), Dr Roly Nieper (Animal Health Australia Ltd), Mr Mark Gibson (CRC for Enterprise Distributed Systems Technology), Ms Kris Trott (AB-CRC), Prof Dirk Pfeiffer (Royal Veterinary College, University of London, UK), Prof Ian Lipkin (Columbia University, USA), Mr Geoff Gorrie (Australian Government Department of Agriculture, Fisheries and Forestry), and Dr Martyn Jeggo (CSIRO Australian Animal Health Laboratory)

Seated, left to right:
Prof Barney Glover (Curtin University of Technology), Prof Mal Nairn (Board Chair), and Dr Stephen Prowse (CEO)

The International Advisory Standing Committee meeting

The purpose of the International Advisory Standing Committee is to consider the strategic direction of the AB-CRC and to improve the AB-CRC's international linkages. The IASC, Chaired by Dr Gardner Murray, Australia's Chief Veterinary Officer, considered a range of issues, including risk analysis framework, data management, surveillance programs and methods, emerging threats and the National Biosecurity Strategy.

BOSSS workshop

Many of you will be aware of BOSSS, the Bovine Syndromic Surveillance System, that has been developed Richard Shephard (Research Project 3.015RE *Advanced Surveillance Systems: Electronic data collection and support* (http://www1.abcrc.org.au/pages/project.aspx?projectid=84). In late May, a workshop was held to look at the next steps in trialling BOSSS more widely. While discussions are continuing, a number of states have agreed to broaden their trials of BOSSS.

Visitors

I have had two international visitors who have expressed interest in the work of the AB-CRC. Both are intrigued by the cooperative research centre model. Dr John Hay is CEO of the Institute of Environmental Science & Research Ltd (ESR), one of nine Crown Research Institutes (CRIs) in New Zealand. CRIs were established in 1992 as government-owned businesses with a scientific purpose. Each institute is based around a productive sector of the economy or a grouping of natural resources. Dr Hay has played a part in developing plans to establish a NZ National Centre of Emerging Diseases & Biosecurity. The scope and objectives are similar to the AB-CRC and it was agreed that strong linkages would be important. It may be useful to explore a CRC-type model for the management arrangements in this important initiative.

The second visitor was Dr Larry Kerr who is Assistant Director for Homeland Security, Office of Science and Technology Policy in the USA. He was very interested in the CRC model as a way of bringing researchers and end users closer together. It was interesting to note how well advanced Australia's livestock identification scheme is. We also have some well developed surveillance schemes. It was also interesting to see how we both struggle with jurisdictional matters.

Congratulations

Finally I want to congratulate two of our students who have recently received awards and prizes. Richard Shephard was selected as a 'Fresh Innovator' (http://www.scienceinpublic.com/sciencenow/fresh_innovators.htm) and was able to get considerable publicity for BOSSS. And Andrew Breed won the prize for the best poster at the recent international Wild Mammals and Disease conference in the UK.

COMMUNICABLE DISEASE CONTROL CONFERENCE 2005 – PIECING TOGETHER THE JIGSAW.

Angela Merianos (Curtin University of Technology)

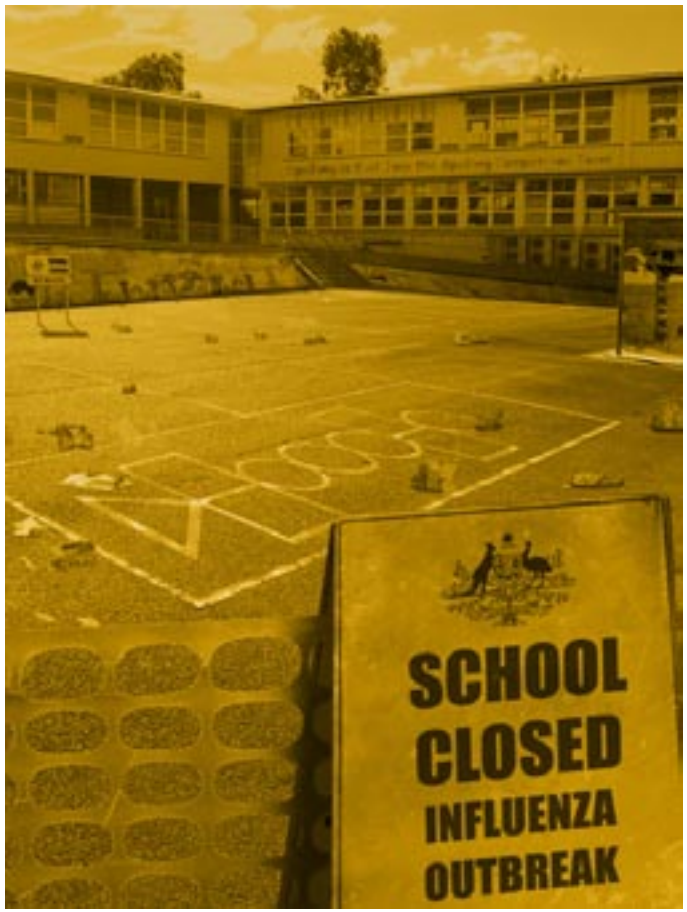
Sydney Convention and Exhibition Centre 2-3 May 2005

The third Communicable Disease Control Conference brought together an impressive list of public health physicians, epidemiologists, and veterinarians from different fields and encouraged dialogue related to emerging infections. The theme of this meeting was the importance of cross-sectoral collaboration and cooperation amongst disciplines in human public health and animal health for risk assessment, prevention, investigation, containment and control of emerging infectious diseases.

Over 75 percent of new and emerging infectious diseases that currently challenge international public health efforts are zoonoses. Some, such as highly pathogenic avian influenza, which has decimated chicken flocks across South-East Asia directly or through culling, and raises the spectre of pandemic influenza, highlight the importance of coordinated, strategic planning and tested operational guidelines at local, state, national and international levels.

The conference was opened by the Hon. Tony Abbott, Minister for Health and Ageing who spoke on Australia's preparedness to manage pandemic influenza in the worst case scenario – a pandemic on the scale of the 1918-1919 'Spanish flu'. The Minister gave an overview of Australia's pandemic preparedness planning and operational arrangements to date, including the imminent release of the *Australian Management Plan for Pandemic Influenza* drafted under the auspices of the National Influenza Pandemic Action Committee, forging stronger links between the health sector response, the animal health sector and the Australian disaster management sector, stockpiling essential drugs and supplies (antivirals, other pharmaceuticals, personal protective equipment, and securing pandemic strain vaccine supply as soon as it becomes available) and developing a risk communication strategy. The Australian Government has committed $114 million to purchase 3.3 million courses of oseltamivir (Tamiflu), making Australia's per capita anti-viral stockpile the largest in the world after Finland. However, the Minister concluded that Australia's "preparations are far from complete".

The Minister's speech was followed by a panel discussion on the current and future challenges and opportunities for communicable disease control in Australia. The panel included two international key note speakers: Dr John Watson, Consultant Clinical Epidemiologist and Director, Respiratory Diseases, Department of the UK Health Protection Agency; and Dr David Butler-Jones, Canada's first Chief Public Health Officer of the newly created Public Health Agency of Canada. The Australian panel members represented key networks and institutions in communicable diseases in Australia, including two members of the AB-CRC: Prof Aileen Plant, Deputy CEO of the AB-CRC based at Curtin University of Technology in Perth, and Dr Linfa Wang, AB-CRC Project Leader based at CSIRO's Australian Animal Health Laboratory at Geelong. Other panel members were Dr Robert Hall, current Chair, Communicable Diseases Network Australia, and Director, Public Health and Chief Health Officer, Victoria; Prof Peter MacIntyre, Director, National Centre for Immunisation Research and Surveillance; Prof John Kaldor, Deputy Director and Professor of Epidemiology, National Centre for Human Immunodeficiency Virus (HIV)



Epidemiology and Clinical Research; and Dr Jenean Spencer, Director, Surveillance and Epidemiology Section, Australian Government Department of Health and Ageing.

Two additional panel discussions explored the issues of avian influenza in greater detail and the public health aspects of the Asian tsunami disaster. The first panel discussion was a comparative analysis of pandemic influenza response preparations underway in Australia, the UK and Canada. Dr Alan Hampson, Deputy Director, World Health Organization (WHO) Collaborating Centre for Reference and Research on Influenza described the global activities underway to better describe the biology of the H5N1 virus and vaccine development efforts underway. The second panel included presentations from communicable disease experts who were involved in the tsunami relief effort, and included clinical syndromes, disease surveillance and the humanitarian response.

In addition to the panel discussions, which were very well attended, the conference offered a number of concurrent sessions on disease surveillance and outbreak investigation, respiratory infections, nosocomial infections (i.e. infections that originate or take place in a hospital), sexually transmitted infection, gastroenteritis and foodborne diseases, zoonotic diseases, and vaccine preventable diseases. As with the two previous Communicable Disease Control conferences, this forum provided an excellent opportunity for junior research and public health professionals to present their work, acquire new knowledge and strengthen networks within and between disciplines.

MODELLING TECHNIQUES TO SUPPORT INFLUENZA CONTROL WORKSHOP

Lynne Dailey (PhD Student, Curtin University of Technology)

Melbourne, 29 April 2005

AB-CRC members Stephen Prowse, Aileen Plant and Rochelle Watkins, Sam Hamilton and I were invited to attend a workshop on *Modelling techniques to support influenza control* at the University of Melbourne, orchestrated by Prof John Mathews, University of Melbourne.

The workshop was very timely in light of the recommendation in the WHO report from the inter-country consultation in Asia in Manila, 6 & 7 May, that all countries, both those affected and unaffected by avian H5N1, should move ahead as quickly as possible and develop or finalise practical operational pandemic preparedness plans.

The workshop brought together researchers from universities, private organisations and all levels of government. The broad aim of the workshop was to explore different approaches to influenza control from a disease modelling perspective and to define key questions and areas for future cooperation. The specific objectives of the workshop were:

1. To promote interest in influenza modelling in Australia
2. To encourage collaborative initiatives
3. To identify modelling questions, such as:
   a. What are the potential impacts of pandemic influenza in Australia?
      - Health effects
      - Economic costs
   b. What are the potential effects of available interventions in reducing transmission of influenza or its clinical effects? e.g.
      - Border quarantine & isolation
      - Home quarantine
      - Closing down of schools, public gatherings
      - Infection control measures – in home or health-care settings
      - Vaccination – inter-pandemic/ pandemic vaccine
      - Antiviral prophylaxis – targeted for different groups
      - Antiviral treatment
   c. What are the potential economic costs of interventions?
4. To identify appropriate data and modelling strategies

The day was based on four sessions. These included the biology and threat of influenza, modelling based on an Australian context, case studies in surveillance and modelling, and a session based on identifying questions and techniques for the future. Stephen Prowse presented an overview of the AB-CRC, and Aileen Plant was involved in various sessions throughout the day based on influenza threats, response capabilities and defining modelling questions from a public health perspective. Both Rochelle Watkins and I presented cases studies related to our AB-CRC research, and Sam Hamilton described the proposed research methods for his PhD project.

All participants, including those from the physical and economic sciences, actively participated in the discussions and added a different dimension to the day. The emphasis was on informality, with succinct presentations to identify research questions and strategies, to report on available expertise and techniques, and to facilitate discussion, interactions and potential collaborations for the future. Overall, the workshop was an invaluable tool for promoting the research of the AB-CRC and forming national links to develop modelling techniques for influenza. Further, the importance of using modelling to help plan influenza response strategies is clear.

STRENGTHENING ANIMAL HEALTH MANAGEMENT AND BIOSECURITY IN ASEAN - SURVEILLANCE WORKSHOP

Chris Hawkins (Department of Agriculture, Western Australia)

The Philippines
11-22 April 2005

The AB-CRC is involved in the SAHMBA project – Strengthening Animal Health Management and Biosecurity in ASEAN – a cooperative venture to enhance biosecurity in neighbouring countries by building capacity in the fields of veterinary epidemiology, risk analysis, and animal disease surveillance.

The surveillance workshop, held in the Philippines, 11-22 April 2005, was the second major input to the project, following on from the capacity building in risk analysis workshop in Jakarta, Indonesia (reported in the March 2005 newsletter).

This component of the project was a training course in veterinary epidemiology, with a particular focus on disease surveillance. The course ran for two weeks, and was held in Manila, at the Discovery Suites, Ortigas.

Training was conducted at several levels, and has continuing components:

- The two-week workshop with experienced trainers;
- Ongoing online, self-paced learning and self-assessment;
- Mentored learning-by-doing through an in-country project over approximately 12 months;
- Periodic assessment of group progress through short tests of knowledge;
- Project presentations, review and recommendations for the future through a final evaluation workshop.

Principal trainers were Dr Angus Cameron and Dr Nigel Perkins (AusVet Animal Health Services Ltd), and myself. Additional input was provided by experienced personnel, including:

- Dr Carolyn Benigno (OIE (World Organisation for Animal Health), previously manager of the Philippines foot-and-mouth disease eradication campaign),
- Prof John Edwards (Murdoch University),
- Dr Ronello Abila (South-East Asian foot-and-mouth disease campaign, Thailand),
- Dr Lisa Adams (AB-CRC), and
- Dr Hume Field (Queensland Department of Primary Industries & Fisheries).

Practical field trip work included taking blood from a duck.

Training activities were conducted in both plenary and small group formats. Trainers used a number of techniques to encourage participation by all participants:

- An introductory activity involving a question posed to the entire group, with a small prize offered to the first person to respond;
- Open discussions, during which anybody with a point of view was invited to contribute;
- Group work where participants from different countries were expected to help each other in solving problems where they often needed to search the internet and collate information;
- Group work presentations by different group members for different exercises so that all participants had the opportunity to present to the entire group.

A variety of learning modes were used during the workshop. Participants were shown how to access the web-based learning facility called *ATutor* developed specifically for the project (http://server.ausvet.com.au/ATutor). Each participant registered on the system and they could then access the online learning modules at any time during the workshop, and will be able to continue with online learning during the 12-month period of learning-by-doing while they undertake their in-country projects. Initially, *ATutor* was used to provide a knowledge assessment prior to commencing the workshop. Knowledge testing on completion of the workshop was assessed using *ATutor* again. Interim self-tests were available on *ATutor*.

Workshop participants with villagers, selecting farms for visits at random.

A little time was also taken during each week for country pairs to develop a plan for their in-country project to be undertaken over the 12-month period after the workshop. Country participants were asked to provide short updates on their in-country projects as these were developed throughout the training program.

The second week commenced with a field trip, followed by an evaluation of the activities attempted during the field work. The field trip, designed to implement sampling strategies discussed during the workshop, began on Sunday 17 April with a trip north from Manila to Subic Bay. Colonies of flying foxes were inspected, leading to discussions on the challenges of sampling wild species that may be potential reservoirs of diseases of humans and livestock. Preparation for village visits required participants to plan data collection, design recording forms, and determine how village farms would be selected. On Monday 18 April, participants visited villages in the San Fernando district to apply sampling techniques in a village setting.

The course finished on day 10 with a review of the content of the entire workshop, the second *ATutor* knowledge self-test, completion of workshop-evaluation forms, and presentation of participation certificates to all participants.

Participant feedback at the end of the training period was strongly positive, with the only concerns being that the course was too long (from one female participant with young children), and that one computer between two people was insufficient.

Ongoing mentoring of participants for the coming year is aimed at encouraging practical application of surveillance principles in the ASEAN countries. Projects are generally small, with low time commitment on the part of participants and mentors. However, it is anticipated that each project will be of direct benefit to participating countries.

PERSONAL PROFILE

Nicole Schembri
PhD Student

I grew up in the lower Blue Mountains, New South Wales, surrounded by the wildlife of the mountains and the multicultural agricultural industry of the Hawkesbury District. I've always had a soft spot for animals and kept a number of pocket pets when I was younger. We currently have a couple of dogs, a small rabbit farm, and are looking to get some leaf insects.

Despite coming from a non-agricultural family background, agriculture was very much second nature to me. I studied agriculture all through high school and the Higher School Certificate, then went on to complete a Bachelor of Agricultural Science (BScAgr) at the University of Sydney, majoring in animal science. While at university, I developed an interest in wildlife conservation, exotic diseases and feral animal control, and have focussed most of my professional experience in these areas. It was my experience at the Moss Vale Rural Lands Protection Board in pest animal management and animal health that was the turning point in my short career.

With the Lands Protection Board I furthered my appreciation for livestock diseases and the implications disease can have for local producers, the local economy and international trade.

Following my professional experience with the Lands Protection Board, I was asked to undertake a peri-urban pig surveillance project in the Sydney Basin, funded by NSW Department of Primary Industry over a period of almost 2 years. This project focussed on the movement of pigs through saleyards, trading patterns of pigs, and the knowledge of pig producers relating to emergency disease risk factors, and formed my university Honours thesis.

After completing my BScAgr, I worked with Meat and Livestock Australia (MLA) in their National Livestock Reporting Service. This role afforded me the opportunity to learn more about the plight of today's livestock producers and the environment in which they operate. With my pig research attracting quite a bit of industry attention, I wasn't at MLA for long before a PhD was being offered by the AB-CRC with Sydney University, using my Honours research as the background for the new study. The PhD is titled *Peri-urban regional surveillance for biosecurity for pigs in eastern Australia*. I really enjoyed the field work and the interaction with the local producers in my initial study and was excited by the opportunity to further my studies in an area I am very interested in.

This current project involves reviewing current pig keeping legislation, educating producers about awareness of abnormal behaviours and clinical signs of disease, reviewing current extension materials and methods, as well as possible alternative animal identification technologies. The information obtained will be used to locate peri-urban pig producers, identify and track pig movements, and improve producer awareness of disease.

I'm looking forward to the next couple of years and am excited to be involved in the reshaping of Australia's pig industry.

OBITUARY AND TRIBUTE TO DAVID BANKS

Tim Buick, Peter Daniels, Robyn Martin, Pat Boland and John Wilson (DAFF)

The AB-CRC lost one of its strongest proponents with the tragic death of Dr David Banks in the Lockhart River plane crash on 7 May 2005. David described himself as a bug-hunter, and the happiest times of his professional life were doubtless on field trips in Australia's north, Papua New Guinea and Indonesia. David was a member of a small, enthusiastic group who developed the first bid for a biosecurity cooperative research centre. That bid failed and it was characteristic of David, believing in the worth of the concept, to press on. He had a major role in the second, successful bid which led to the commencement of the AB-CRC in late 2003.

David was highly qualified, gaining (in chronological order): Bachelor of Science in Animal Science from the University of London in 1971; Bachelor of Veterinary Medicine from the University of London in 1975; Member of the Royal College of Veterinary Surgeons in 1975; Diploma of Tropical Veterinary Medicine from the University of Edinburgh in 1976; Member of the Australian College of Veterinary Scientists – Epidemiology Chapter in 1983; and PhD in Veterinary Epidemiology from James Cook University in 1985.

David Banks with a farmer in Laos

David combined his academic rigour and detailed knowledge of infectious diseases of livestock with a love of tinkering with practical ideas and electronic gadgets. His solar and gas powered mosquito trap was in continual development, but has proved successful for monitoring arboviruses (i.e. viruses transmitted by bloodsucking arthropods such as ticks and fleas) in remote locations. At a recent workshop he presented a concept for streamlining data management for field samples, which would have ensured accurate sample identification and avoided double entries for field staff. He planned to build robust devices, incorporating drop-down menus to minimise buttons used by muddy and bloody fingers.

David's interest in small projects in the field belies the role he played in national and regional animal health. As General Manager of Animal Biosecurity and then Principal Scientist with Biosecurity Australia, David managed import risk assessments, quarantine policy and technical export negotiations for livestock. He was a member of the Animal Health Committee and several other key groups. David possessed exceptional skills of communication, persuasion, industry rapport and no nonsense defining of boundaries. These skills were exemplified by his masterful handling of the crises that arise in high level professional work, such as the widely publicised Cormo Express incident. He guided the animal health policy of the Northern Australia Quarantine Strategy and frequently led consultations with animal health authorities in Indonesia and Papua

New Guinea. He was previously Chief Veterinary Officer in Papua New Guinea and at another time managed a large Australian Centre for International Agricultural Research project in the Pacific, based in Fiji. David supported his profession through the Australian Veterinary Association and his role as Australian Delegate to the Commonwealth Veterinary Association.

David somehow made time for other interests and rowed, cycled to work on a vintage bike that he welded, and supplied honey to his colleagues.

Tim Buick & Stephen Prowse

We can only ponder the contribution to animal health that David was yet to make. He was to present a series of workshops for the AB-CRC on risk assessment and risk communication. He also told of plans to leave Canberra's winter behind and work for a few months each year on Cape York furthering his bug-hunting. We had intended to offer David an Honorary Research Fellow position that would maintain his connection with the AB-CRC.

On behalf of the AB-CRC, I would like to extend our condolences to David's wife, Anne, and their family. David will be sorely missed by many people. However, we will remember him for his generosity, friendship and achievements. It is also our intention to remember David through the naming of a significant event in the AB-CRC's calendar.

CONFERENCES

A conference database is available at www.abcrc.org.au > News & Events

Society for Applied Microbiology Summer Conference on Spore forming bacteria - emerging and re-emerging issues.

4-7 July 2005
Brighton, United Kingdom

For more information visit:
www.sfam.org.uk/sumconf.html

First National Symposium on Conservation Medicine

7-8 July 2005
Auckland, New Zealand

For more information see
www.ecohealth.net/pdfs/Flyer%20CM%20symposium.pdf

One Profession, One Vision 28th World Veterinary Congress/142nd American Veterinary Medical Association Annual Convention

16-20 July 2005
Minnesota, USA

For more information visit
www.wvc2005.org/

60th International Conference on Diseases in Nature Communicable to Man

7-9 August 2005
Alberta, Canada

For more information visit
www.provlab.ab.ca/bugs/incdncm/info.html

2nd European Conference Functional Genomics and Disease

6-10 September 2005
Oslo, Norway

For more information visit
www.esffg2005.org

Looking Ahead in Epidemiology 14th Annual Meeting of the Australasian Epidemiology Association

5-7 October 2005
Newcastle, NSW

For more information visit www.icms.com.au/aea2005/

12th International Symposium of the World Association of Veterinary Laboratory Diagnosticians

16-19 November 2005
Montevideo, Uruguay

For more information visit
www.congresos-rohr.com/labdiag/index.htm

Application of Biotechnology to Zoonotic Disease Diagnosis 7th OIE/ World Association of Veterinary Laboratory Diagnosticians Seminar on Biotechnology/ 12th International Symposium of the World Association of Veterinary Laboratory Diagnosticians

17 November 2005
Montevideo, Uruguay

For more information visit www.oie.int/eng/montevideo/home2.htm