

National Centre for Asbestos Related Diseases

an Australian Research Cooperative



Newsletter Vol 2 | October 2012

Editor | Tracy Hayward

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20th Anniversary of Mesothelioma Cell Lines

A series of events were held on Tuesday 24 July 2012 to mark the 20th anniversary of the publication of the world's first mesothelioma cell lines, a significant scientific milestone in our research. This was an opportunity to reflect on how far we've come, the support that's been generously offered along the way, how the science has changed, and what is ahead.



ROGER REDDEL (LEFT) AND BRUCE ROBINSON



RESEARCH ASSOCIATE IAN DICK, HON BILL MARMION MLA, HON GARY GRAY AO MP

We were delighted to host a guest lecture by Professor Roger Reddel, entitled "Cell Lines: an enduring resource for the next generation of medical research." Roger is the Lorimer Dodds Professor and Director of the Children's Medical Research Institute at the University of Sydney. He is also the Director of CellBank Australia. An intriguing aspect of Roger's talk was the contamination and misidentification of cell lines in research, and the unfortunate discoveries by even very notable researchers that the cell lines that they have worked on for considerable amounts of time are from different organs or even different species to what they had thought. One of the services of CellBank is a comprehensive, and constantly updated List of Contaminated and Misidentified Cell Lines.

Bruce Robinson talked about the beginnings of mesothelioma research in Western Australia to Lindy Brophy, in an article for UWA News (6 August 2012, Vol 31, No. 11):
Soon after I returned from doing my doctorate in the US, the "tsunami" of mesothelioma became apparent, with people who had worked in the asbestos mines at Wittenoom flooding through the hospital doors....My friend and colleague Professor Bill Musk asked me if I could do anything with the skills I'd learned in my doctorate on the immunology of cancer. So I said to the small group I was working with that I thought this was really important and they said "yes, let's try it." ..."I asked everyone around the world and there were no antibodies, no cell lines, nothing. We had to start the field from scratch."

"I asked everyone around the world and there were no antibodies, no cell lines, nothing. We had to start the field from scratch."



ROGER COOK MLA, WA SHADOW MINISTER FOR HEALTH WITH (FROM LEFT) RESEARCHERS SOPHIE SNEDDON, JUSTINE LEON, SARAH WONG AND KELLY MARTINOVICH



RESEARCHERS LINDA MANNING AND ALISON ROSE, WITH RUBEN GORDON



BABU SIMON FROM THE WA DEPARTMENT OF HEALTH WITH ANNA NOWAK



WAIMR CHAIR LARRY IFFLA, UWA DVC (RESEARCH) ROBYN OWEN AND NCARD CHAIR JOHN AKEHURST

An evening cocktail function was held at the University Club of Western Australia. Guests included the approximately 30 research staff of the Tumour Immunology Group within NCARD; original members of the research team who published the mesothelioma cell lines, Board Members, politicians, and supportive friends. Roger Reddel spoke of the many impacts that the team have made, and the continual struggle to find the still elusive cure for this devastating disease. The Chair of the NCARD Board, John Akehurst, outlined the vision of engaging companies and government organisations which carry liability for care and compensation of asbestos victims, with commercial proposals for large scale funding to pursue research in partnership. Together, John and Bruce presented Lew Watts from the Insurance Commission of Western Australia with an Impact Award to acknowledge their extraordinary generosity in funding mesothelioma research over the decades. A dinner for special guests rounded off the celebrations.

TRACY HAYWARD



BRUCE ROBINSON WITH INSURANCE COMMISSION OF WA GUESTS LEW AND CORALIE WATT, JUDY MCAULAY, MICHAEL WRIGHT, KEN MCAULAY



JOHN AKEHURST, JAN ALCOCK, BRUCE ROBINSON, DALE ALCOCK

A Visiting Fellow's Perspective

Dr Joost Lesterhuis from The Netherlands recently spent 18 months as a Visiting Research Fellow in Perth's Tumour Immunology Group within NCARD. This is what he had to say about his work and experience.



I came to Perth because I thought the Tumour Immunology Group (TIG) was doing excellent cutting edge research into the positive immunological effects of cancer chemotherapy in mesothelioma. In fact, they were the very first to show a clear beneficial effect of chemotherapy on the immune system, which could be further exploited by combining it with other forms of immunotherapy in cancer. This started a whole new field of research. I particularly admired the very close link the studies of TIG have with the clinic: the obtained results can always very easy be translated into the clinic.

My primary research focus is not asbestos disease per se, it is more about the immunology of chemotherapy in general, irrespective of the cancer type.

I have investigated therapeutic strategies to exploit the positive immunological effects of chemotherapy in laboratory models. Specifically, I combined chemotherapy with therapies that block the inhibition of T cells (the immune cells that actually do the job of killing tumor cells). Normally in our body, T cells are being shut down all the time because otherwise they would destroy healthy tissue, as is the case in so called 'auto-immune' diseases such as multiple sclerosis.

In cancer, this inhibition is unwanted: we actually want the T cells to do their job more easily. In recent years drugs have been developed that block receptors on the T cells that would normally inhibit their function. The result of the blockade is that T cells are very easily activated, and remain activated. An example of this type of drug

is ipilimumab, which has recently been approved in melanoma. I have combined these drugs with chemotherapy, and found that they work very well together, enforcing each other's anti-cancer effect. I also found that it does depend on the chemotherapy that we use, as well as the drug for blocking T cell inhibition. Lastly, timing of the two drugs appears to be very important for optimal efficacy. These results can be translated into clinical trials very quickly.

children and me. Our kids love the surf, the fishing and the camping, and they have really adapted to the language very quickly and enjoyed school a lot. My wife and I love the magnificent landscape and wildlife of Australia, the traveling and the open and friendly people. Perhaps it is because you have so many people from overseas, but it is really easy to blend in and make true friendships. Australia is really an amazing country!

“I think Australians have been very good at doing provocative research that goes against common scientific dogmas”.

In fact, clinical studies have now already been initiated, in which this synergy is further investigated in cancer patients.

The research environment is great here, with a lot of support from the group leaders and help from all research personnel. Thanks to that help, and because the tools and models were already operational, I have been able to do a lot of work in a relatively small period of time. In addition, I have had the freedom to explore some new areas of research, focusing on the question of why some cancers do respond to therapy and others do not. Together with my colleagues from TIG and a researcher from the Telethon Institute of Child Health Research (TICHR) I am developing a new model, which I hope will give us a clue to start answering that question in the near future.

Life here has been great for my wife, our

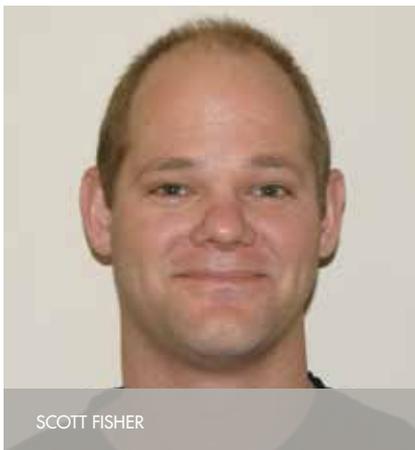
I think in Europe the pressure is a bit higher and the atmosphere a bit more competitive, with so many research centers so close to each other. The good thing about that is that it may keep you on edge, but the downside is that it tends to make it more difficult to do very innovative, non-standard research. I think Australians have been very good at doing provocative research that goes against common scientific dogmas.

Thanks to the positive results that I have obtained here, I will now further explore the possibilities of activating the immune system in combination with chemotherapy, both in laboratory models as well as in patients. In addition, the researchers of TIG and I are developing a model that will hopefully allow us to explore the crucial question of why some tumours respond to therapy and others do not.

JOOST LESTERHUIS

In Brief

DOD



SCOTT FISHER

Congratulations to the team of researchers – particularly Scott Fisher, the coordinator of the grant application – who have successfully achieved something few Australian research teams have: obtained funding from the US Department of Defense. While all grant processes are gruelling, this one is particularly so, and the team – Bruce Robinson, Anna Nowak, Richard Lake, Cleo Robinson and Scott Fisher, have been granted nearly \$270,000 for the project.

Targetting immunological “restrainers”: understanding the immunology behind combination chemo-immunotherapy to improve the treatment of malignant mesothelioma from the US Department of Defense Peer Review Cancer Discovery Award.

DEVIL'S DUST

The ABC will be screening “Devil’s Dust”, a drama about Bernie Banton’s struggle with James Hardie, based on Matt Peacock’s book “Killer Company” in the second week of November. We have been in touch with the ABC in an effort to publicise the Australian Asbestos Network website, and our research centre, following the screening.

IMIG



The International Mesothelioma Interest Group (iMig) Conference is the peak international meeting for mesothelioma researchers. Held biennially, the meeting this year took place in Boston in the United States from 11-14 September 2012. NCARD was well represented, with Bruce Robinson, Jenette Creaney, Richard Lake and Anna Nowak all invited speakers and session chairs on topics including Pathology, Clinical Trials, Biomarkers and Chemotherapy. Scott Fisher and Cleo Robinson also presented at iMig, and Bill Musk chaired a session on Epidemiology.

INVITED PAPER

Professor Anna Nowak has been invited by guest editor Professor Valerie Rusch to contribute to a special issue on Malignant Pleural Mesothelioma in the Annals of Cardiothoracic Surgery. The issue will coincide with Asbestos Awareness Week in November, and 10,000 electronic copies will be distributed to all major thoracic centres treating pleural mesothelioma world wide. Anna’s contribution is titled “Chemotherapy for malignant pleural mesothelioma: a review of current management and a look to the future”.

ASM

The NCARD Annual Scientific Meeting, and Tumour Immunology Group meeting, will be held at Matilda Bay Conference Centre, Perth from Wednesday 31 October to Friday 2 November. We are delighted to have Professor Courtney Broaddus from the University of California join us as guest speaker. Courtney’s particular research interest is cell apoptosis – cell death. Malignant mesothelioma is especially resistant to apoptosis, so any advances can quickly be translated to clinical improvements.



COURTNEY BROADDUS

**ASBESTOS
AWARENESS WEEK**
25 NOVEMBER –
1 DECEMBER 2012