

DR JOOST LESTERHUIS. PHOTO COURTESY CANCER COUNCIL OF WA

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A SUCCESSFUL FELLOW

NCARD senior researcher Joost Lesterhuis had quite a start to 2017: he effectively was made a fellow three times over in the first few weeks of the year, with the awarding of an NHMRC Career Development Fellowship, the inaugural Bernie Banton Fellowship, and a Cancer Council of WA Fellowship.

The NHMRC Career Development Fellowship, *Exploring and exploiting novel therapeutic avenues in mesothelioma*, was one of just three awarded to researchers based in Western Australia. The fellowship will provide \$425,000 in funding over four years.

As the most highly ranked applicant working on mesothelioma research, Joost was also awarded the Bernie

Banton Fellowship, which the NHMRC established "to commemorate the life of Bernie Banton through supporting health and medical research related to mesothelioma". As the first Bernie Banton fellow, Joost recognises this as a particular honour.

The Cancer Council of WA also awarded a fellowship to Joost, for *Identifying new effective treatments for mesothelioma*, which also runs over a

four year period. As Joost had received the NHMRC fellowship, he shares the Cancer Council fellowship with another researcher, Curtin University's Associate Professor Georgia Halkett.

In February Joost also learned that he is one of 22 applicants selected to present at the US-Australian Emerging Cancer Biomedical Technologies Workshop in Washington DC in mid-June. A collaboration between the US National Cancer Institute, Virginia Tech and the Australian Trade and Investment Commission, the workshop will include a reception hosted by the Australian Ambassador.

It's a tremendous success for Joost, who emigrated with his family from the Netherlands to Western Australia in 2014 to work at NCARD after a two year stint as a visiting scientist here, working especially with Richard Lake. A clinician-scientist characterised by his energy and enthusiasm, Joost's current research includes combination immunotherapy and chemotherapy for mesothelioma, and the use of network science to discover why some cancer patients respond to therapies, while others do not.

ADS PHD SCHOLARSHIP

Melita Markey, Chief Operating Officer, Asbestos Disease Society of Australia Inc.

Through the generous donations received from the Asbestos Diseases Society of Australia Inc. (ADSA) Steve Aiberti memorial Walk for Medical Research and Asbestos Awareness, the ADSA will be funding a three and a half year PhD Scholarship into translational mesothelioma research. This will be advertised around the world as the Asbestos Diseases Society of Australia Inc. PhD Mesothelioma Research Scholarship later this year to attract the best clinicians/scientists working with mesothelioma patients. The scholarship will commence in the second half of 2017 and is to be supervised by Professor Nowak and the NCARD team at The University of Western Australia.

The ADSA and our members recognise NCARD as being at the forefront of mesothelioma research, and we want to give the hardworking team a boost in resources. We hope to attract further funds to match our donation and work toward treatments that further extend life, relieve symptoms and indeed provide a cure for mesothelioma in the near future.

Please support our walk for life saving research funds this year from September 10th – 15th. We look forward to marching with the NCARD team through the city to Solidarity Park to end the walk and we welcome those that can join us for all or part of the walk.



MR STEVE AIBERTI PRESENTING A CHEQUE TO PROF NOWAK FROM THE 2015 WALK AT NCARD. SADLY STEVE PASSED AWAY FROM MESOTHELIOMA IN JUNE 2016 BUT HIS COMMITMENT TO SAVING LIVES WAS STEADFAST EVEN AS HE BATTLED HIS OWN MESOTHELIOMA DIAGNOSIS. PHOTOGRAPH PROVIDED COURTESY OF THE ASBESTOS DISEASES SOCIETY OF AUSTRALIA INC. © 2015.



2017 ERIC G SAINT MEMORIAL AWARD ANNOUNCEMENT, ADSA ANNUAL GENERAL MEETING, SUNDAY 19 FEBRUARY 2017. DR HELEN CLAYSON FLANKED BY PROF ANNA NOWAK AND DR JOOST LESTERHUIS. PHOTOGRAPH PROVIDED COURTESY OF THE ASBESTOS DISEASES SOCIETY OF AUSTRALIA INC. © 2017.



ADSA MANAGER & COUNSELLOR ROSE MARIE VOJAKOVIC; DR HELEN CLAYSON, 2017 WINNER OF THE PROFESSOR ERIC G. SAINT MEMORIAL AWARD AND PROF ANNA NOWAK. PHOTOGRAPH PROVIDED COURTESY OF THE ASBESTOS DISEASES SOCIETY OF AUSTRALIA INC. © 2017.

Anna Nowak receives Mesothelioma Applied Research Foundation Pioneer Award

NCARD's Professor Anna Nowak was the 2017 recipient of the International Mesothelioma Applied Research Foundation's Pioneer Award, for her "exceptional achievements and dedication to mesothelioma research".

Anna was presented with the award while attending the International Symposium on Malignant Mesothelioma in Bethesda, Maryland, at the conference awards dinner on 27 March. "Last night was wonderful", said Maja Belamaric, the Foundation's Communications Director. "We were honoured to present the award to Dr Nowak".

The Mesothelioma Applied Research Foundation (MARF) is a non-profit charity organisation based in the US. It presents the Pioneer Award annually

to "thought leaders and allies" who have substantially contributed to the advancement of mesothelioma research, treatment, care, support, education and advocacy. Anna is internationally recognised and is an instrumental figure in the mesothelioma community. She currently serves as a member of MARF's Scientific Advisory Board.

"Not only is Dr Nowak a talented scientist whose contributions to the field of mesothelioma research and treatment bring hope to our patient

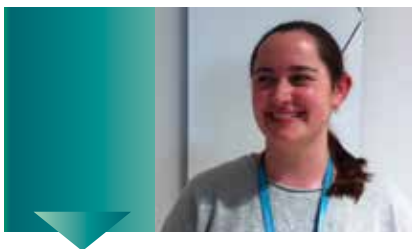


PROF ANNA NOWAK RECEIVING THE MARF PIONEER AWARD PHOTO COURTESY MARF

community; she is also an incredibly caring and humble clinician whose first and foremost priority is always the patient", said Melinda Kotzian, the CEO of MARF. "This Pioneer Award is one way in which we are able to honor her dedication and success".

NCARD RESEARCH ASSISTANTS

Research Assistants (RAs) are the backbone of a laboratory. I asked NCARD's RAs to answer some questions about themselves, including "What's something about being a Research Assistant that you think other people may not understand?", "What is frustrating about working in science?" "What gives you satisfaction in what you do?" Getting responses did not always come easy.



KIMBERLEY BURTON

I started at NCARD in July 2015 and before that was doing a Masters of Philosophy in Pharmacology.

I work with Scott Fisher on two projects: one is how different forms of asbestos change mesothelioma development; and the second looks at underlying genetic factors that may distinguish why some people develop mesothelioma and others don't.

Being a Research Assistant can often involve unorthodox hours and requires a high level of organisation. It can be frustrating to work in science as progress is slow. You often need a lot of negative results to achieve one step forward.

It's satisfying to find new little pieces of the puzzle which help us understand this disease better and therefore lead to better patient outcomes.

Outside of work I am a dancer. I primarily compete and teach west coast swing, which is a partner dance.



TOM CASEY

I first came to NCARD during my honours year in 2014, working on a project under the supervision of Scott Fisher. After completing this, I landed my first job at Curtin University with Delia Nelson and Connie Jackaman as a research assistant in their tumour immunology lab. I worked there for nine months working on various projects involving mesothelioma and the innate immune system before taking up an opportunity with the immunology division at Lion's Eye Institute under the supervision of Mariapia Degli-Esposti. There my work centred around murine cytomegalovirus and its interactions with the immune system. After a year in that lab, I was offered an opportunity at NCARD once again with Scott

Fisher, and have been working here since November 2016.

I am currently working on a few projects for Joost Lesterhuis and Scott Fisher, mostly centred on checkpoint blockade therapy, which is a means for reinvigorating a senescent immune system to attack cancer cells, and how this can be used to supplement cancer therapies we currently use to make them more effective. I have also recently begun working on a new project that aims to target the metabolism of tumour cells. The project aims to target the peroxisome proliferator-receptor signalling pathway, which plays a role in metabolism regulation of the cell. From our preliminary data, targeting this pathway seems to specifically inhibit tumour cell growth while leaving normal cells unaffected.

I enjoy working in research as it gives me an opportunity to contribute to a greater cause and produce work that could one day benefit others. I enjoy the challenge of problem solving and creative thinking, as well as the personalities that I come across each day.

The most frustrating thing about working in research is definitely funding. For something so important and beneficial to society, the money allocated to medical research is quite minimal. There are so many great ideas that fall by the wayside simply because poor funding limits the ability to pursue these ideas.

Something people may not understand about research is that it is quite a slow process and a lot of work can go into producing a small amount of (very important) data.

Outside of work I am very much into my sports. I currently play cricket for Perth Cricket Club, which takes up most of my summer (and a fair chunk of the winter), and do a bit of boxing to stay fit.



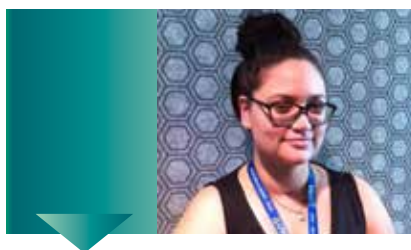
HANNE DARE

Hanne is an NCARD stalwart, having worked with the group since 2004. She is a member of Jenette Creaney's Biomarkers team, and performs ELISAs (enzyme linked immunosorbent assays), sample processing and handling. Hanne currently works three days a week, and has two delightful daughters. She arrived in Australia from Denmark in 2001, and loves returning there when she can, and cooking up a storm with her Thermomix.



CATH FORBES

Cath Forbes had a very long way to come when she started at NCARD in mid-2015: from the Lions Eye Institute on Level 4 of the Harry Perkins Institute of Medical Research, to Level 5, where NCARD is based. Cath is a highly valued member of the team, working closely with Dr Vanessa Fear, Dr Scott Fisher and others across a range of mouse research projects, contributing molecular biology skills to TCR sequencing, neoantigen *in vivo* and *in vitro* assays, flow cytometry experiments and dendritic cell culture. Outside of work Cath has an enviable voluntary role, caring for kittens from the nearby Cat Haven.



LEESA GOODSSELL

Leesa started in January with NCARD, and is a member of Professor Jenette

Creaney's biomarkers team. In several ways at "the sharp end" of NCARD's research work, obtaining consent from mesothelioma and lung cancer patients, something which requires sensitivity, tact, and knowledge of how to get around a very busy hospital. Leesa has also recently done her phlebotomy training, with several NCARD staff volunteering to have blood taken so that she could practice under the firm but gentle supervision of her colleague Justine Leon.

Before coming to NCARD, Leesa worked as a laboratory technician in a pathology lab.

Outside of work, she likes to watch TV series, see family and friends and read molecular biology/ biotechnology articles.

Leesa has the longest commute of anyone in the team, living in North Mandurah, about 70kms away.



SARAH HENN

After high school I was awarded a scholarship for Curtin University to study a Bachelor of Science in Laboratory Medicine. During my studies I went on exchange to Jönköping University, Sweden and spent a lot of time before, during and after the semester travelling all around Europe. When I came home to finish off my clinical placements, I realised that diagnostic pathology was not for me; I wanted to be more involved in research.

After graduating, I enrolled in a Bachelor of Science Honours degree in Biomedical Sciences at Curtin University, working with Dr Delia Nelson and Dr Connie Jackaman on mesothelioma and immunotherapy. At the end of my honours year, I didn't feel quite ready to jump straight into a PhD and felt I wanted to study some more. During another six month Europe trip, I applied for and was accepted into a Masters of Science in (Translational Medical Research at the

University of Heidelberg, Germany. After finishing off my thesis on the immune phenotype of colorectal cancer in 2016, I applied for my current position here at NCARD, working with Dr Alistair Cook.

Although I've only just started, I think working with NCARD is great; everyone is lovely and there is always cake! My work is really translational: I get to work with both patient samples and mice while researching the use and optimisation of combination radiotherapy and immunotherapy. While I would like to one day complete a PhD, I'm really enjoying working as a research assistant because I get to work on a lot of projects at once, and it's nice not to think about writing a thesis! Although I can't wait for my next travel adventure, I'm also really enjoying being back home in Perth with good coffee, good beaches and lots of sunshine.



DANIKA HOPE

I started at NCARD in July 2015. Before that I was working at Royal Perth Hospital on a short term contract as a medical scientist.

I am working with Joost Lesterhuis on a project investigating where the chemotherapy drug cisplatin ends up within the tumours and different populations of immune cells.

I would describe Research Assistants as a rare species that like to eat cake and have ample warning about grant application deadlines.

Working in science is frustrating as it requires a 30 minute slideshow presentation of background information for me to be able to talk about what I did that day to my parents and friends.

What gives me satisfaction is knowing that the work we do could possibly help to improve the quality of life for someone down the track.

Outside of work I like to go swing dancing (especially Lindy Hop) and exploring new Japanese restaurants in Perth.



JUSTINE LEON

Before I came to NCARD I was studying a Bachelor of Science in Human Biology at UWA. I started working here in 2008 as a lab assistant, making up reagents, ordering consumables etc. In 2010 I started working as a research assistant, and in 2015 as laboratory manager.

I work with Prof Jenette Creaney. We focus on bio-banking mesothelioma blood and tissue samples. As a clinical research assistant, I approach newly diagnosed mesothelioma patients and ask if they would be interested in participating in our research study. We like to collect blood samples from patients over the course of their disease and see if we can find biomarkers that may help us with diagnosis and prognosis.

A difficult aspect of my work is recruiting patients, given they have just been diagnosed with a terminal illness.

A frustrating aspect of science is the difficulty in applying for funding, given how expensive experiments are to run. And it's frustrating when experiments don't work as planned.

It gives me satisfaction to know that, as small as it may be, we are helping cancer patients. Our work may not help current patients, but future patients.



CATHERINE RINALDI

I've been working at NCARD for three and a half years. Before coming here I completed my PhD which looked at preventing influenza virus infections and allowed me to develop a unique skillset.

I work with Joost Lesterhuis on a project that is investigating what molecules/genes drive mesothelioma tumours to become invasive. We are using technology (RNA sequencing/network analysis) that will allow us to determine targets to this characteristic of the tumour which may be modified to hopefully have an anti-tumour effect.

I find the most frustrating thing about science is the lack of funding for medical research. This often means that important projects go unfunded and that there is little job security.

Away from research I also enjoy a challenge. I have participated in several ironman 70.3 events and many triathlons, and have cycled for 24 hours (twice) to raise money for respiratory research.

Catherine left in February to take up a Research Officer position in the laboratory team of UWA's Wally Langdon based at Sir Charles Gairdner Hospital



CRAIG RIVE

I began as a casual research assistant in November 2015 for NCARD, and was offered a full time position in February 2016. Before this I was completing my PhD in Biomedical Science. My thesis, entitled "The Immunopathogenesis of Delayed Drug

Hypersensitivity”, concentrated on delayed hypersensitive reactions to specific medications. These are T cell mediated reactions and my research gave me a strong T cell and T-cell antigen presentation background.

I am currently working with the Biomarker and Discovery (BAD) group, led by Prof Jenette Creaney, helping to further the research into neo-antigen presentation and T cell reactivity. It is hypothesised that these natural T-cell reactions to mutation derived neo-antigens can be used to develop translatable patient-specific therapy to mesothelioma and lung cancer.

Science is frustrating and hard. You can work hard and long hours for very little result. Yet when you make a breakthrough, no matter how small it may seem to others, the feeling is indescribable.

My thesis was accepted in September 2016 and I am in the process of receiving my award. I have been offered my first postdoctoral position to work with NCARD collaborator, Professor Rob Holt in Vancouver, Canada. However, I do wish to return to Perth and work with NCARD again as a postdoctoral researcher.

Craig left for Canada in January and is now a member of Prof Rob Holt's laboratory team in Vancouver.



EBONY ROUSE

Before joining NCARD I was a student involved in a breast cancer research project based at Royal Perth Hospital.

I started working with NCARD several years ago with Prof Bruce Robinson and Prof Jenette Creaney as my supervisors in their clinical and laboratory team. This team investigates biomarkers in mesothelioma and lung cancer patients with the aim, ultimately, of creating personalised tumour vaccines.

What's frustrating about working in science is that things don't always work, leaving you troubleshooting issues, sometimes for a while. I love when an experiment just works, and I get to see good results.

Outside of work, I have a partner and a young child and I love watching my child learn new things. This week she tackled shapes; next week, who knows?



JOANNE SALMONS

I am originally from the UK. Before working for NCARD I embarked on 18 months of world travel which led me to living permanently in Western Australia and becoming an Australian citizen.

I started at NCARD in March 2009. Previously I worked at Cancer Research UK, Sutton in South London, working in pre-clinical *in vitro* testing of cell signalling inhibitors in combination with chemotherapy on colon, prostate and lung cancer cell lines. Before that I worked at the Health Protection Agency, Wiltshire, working on a commercial Anthrax vaccine, and quantifying vaccine properties with *in vitro* assays.

Currently I am working with Dr Scott Fisher and two other Research Assistants, Kim Burton and Clarissa Yates, on a project identifying genes associated with asbestos exposure and investigating if different forms of asbestos result in the development of mesothelioma lung cancer in mouse models. I have worked on other NCARD projects undertaking pre-clinical immunological assays and combining chemotherapy and immunotherapies in mouse models.

The frustration of working in science is the uncertainty of funding for research projects, which means we have little job security and short term rolling contracts. What is satisfying is gaining more insight into cancer development

which can be used translationally to improve patient outcomes.

I think something about being being a Research Assistant that other people may not understand is the assays we do!

Outside of work I have three young children aged four, two and one. I don't really have any time for hobbies! I enjoy spending time with my family, meeting up with friends, going to the beach, parks etc. I occasionally make it to the gym and enjoy a child free evening!

PAULA VAN MIERT



I've been working for NCARD since April 2016. I'm one of the few lucky people to get my hands on a permanent residence visa, and on top of that to find a job, immediately after entering Australia.

I have been working as a Research Assistant in the Netherlands for over 20 years, mostly in Leiden in the field of transplant immunology. The funny thing is, the world has literally turned upside down. As hard as we tried to dampen the immune system there, we are now working just as hard to activate it here!

I'm working for Prof Bruce Robinson and Prof Jenette Creaney. It is all about finding new ways to boost the immune system so it will attack the tumour cells.

One of the ways could be to show the immune system which of the proteins on the tumour cells are mutated and therefore only exist on tumour cells and not on healthy cells. First of all we have to find these changed proteins but once we have identified them we can make a vaccine with them and give this to the patients. Hopefully the immune system will respond to this and make more or better cells to attack the cells carrying these proteins, killing the tumour cells while the healthy cells stay safe.

Outside my work I paint abstracts, dance Lindy Hop and work as a volunteer at Remida, a non-profit organisation that collects clean waste products from industry (think fabrics, paper, plastics – you have no idea how much stuff is thrown away) to use for art projects in schools, but also for artists and hobbyists.

Living in another country really changes your life, you have to make new friends, adjust to some customs and get a feeling for the language. It's tough to miss my family and friends in Holland, but I truly appreciate the warmth (and by that I don't mean the temperature) and hospitality of the Australian people.



MAY YAP

I am a bit of a fresh chicken, coming to NCARD in mid-April more or less straight after completing my Masters of Infectious Disease in 2016. I work with Jenette Creaney and the rest of the BAD (biomarkers and discoveries) team helping out with processing samples for biobanking. In particular, I am working on cell culture where the aim is to be able to grow patient's immune cells from samples of blood or fluid and test their reactivity to tumour proteins.

The most frustrating thing about working in research is when experiments fail time and time again. However, the most rewarding thing is that even failures provide knowledge and understanding of (in our case) cancer to help the community.

In my free time I like to read and draw. Currently I am hooked on a book called Quiet by Susan Cain, which is about the power of introverts in our world. I also like to stay active and I am learning how to ride a motorbike.

Terry Speed and Rolf de Heer

NCARD hosted two very special guests in February, each highly acclaimed in their own fields: Professor Terry Speed and filmmaker Rolf de Heer.

Professor Terry Speed is an outstanding bioinformatics statistician, winner of the Prime Minister's Prize for Science in 2013, and is now retired (a word used gingerly) Head of Bioinformatics at the Walter & Eliza Hall Institute (WEHI) in Melbourne.

Visiting his former home of Perth, Terry was invited to speak at the first NCARD lab meeting of the year on 9 February. With a characteristic twinkle in his eye, Terry said that one of his current roles is "to inspire students to waste their life in science". He gave a lively history of his education and career, from Berkeley to Sheffield to Monash, CSIRO, UWA, and WEHI. Terry has analysed topics as varied as water use, rates of imprisonment, the size and distribution of Argyle diamonds in the Kimberley, and nuclear accident risks; but summarises his work in removing unwanted variation thus: "if you have really bad data, I'm the person to talk to".

He spoke to the group about salvaging results from contaminated data, adjusting for unwanted variation, the capacity of reagents to contaminate, and the gold standard of top-ranked positive controls.

A Perth International Arts Festival (PIAF) retrospective of the films of Rolf de Heer and Molly Reynolds, Tracking Country (including Ten Canoes, The Tracker and Charlie's Country) brought Rolf to Perth in February; and we took the opportunity to invite Rolf to visit NCARD on 24 February.

Rolf's father Arie, an electrical engineer who had migrated with his family from the Netherlands to Australia when Rolf was a child, died of mesothelioma in 2009, aged almost 87. He entrusted Rolf with 10% of his litigation payout



FROM LEFT: DR. JOOST LESTERHUIS, PROF. JENETTE CREANEY, PROF. TERRY SPEED, SOPHIE SNEDDON



TRACY HAYWARD LOOKING A LITTLE STARSTRUCK WITH ROLF DE HEER

to donate to whatever mesothelioma research he saw fit, and we were honoured that we were chosen as the recipients. Our own remarkable Dutch-Australian, Dr Joost Lesterhuis, took Rolf on a tour of the NCARD laboratories before he joined the group for the traditional eating of cake, and a passionate conversation about his experiences filming in Yolgnu country in the Northern Territory.



DR ALISON MCDONNELL'S ALLERGY CUPCAKES: ANTIBIOTICS AND SHELLFISH

IMMUNOLOGY AND BAKING

It is well recognised that baked goods are an integral part of NCARD. Birthdays, farewells, celebrations, guests and half a dozen other reasons are all marked with cake.

Three very talented scientists – postdoc Dr Alison McDonnell, research assistant Danika Hope, and PhD student Caitlin Tilsed – totally outdid themselves with their immunology themed cupcakes to celebrate the International Day of Immunology on 29 April, which this year fell on a Saturday.

Each followed a different theme: Alison's was common allergies – bee sting and nut, shellfish, and antibiotics; Danika's, petri dishes; while Caitlin made white blood cell cupcakes, complete with eosinophils.

Works of science, works of art, and thoroughly delicious!



CAITLIN TILSED'S WHITE BLOOD CELL CUPCAKES, WITH EOSINOPHILS



DANIKA HOPE'S PETRI DISH CUPCAKES



DR ALISON MCDONNELL'S ALLERGY CUPCAKES: NUT AND BEESTING

AND ALSO...

2017 FIMSA Travel Awards



DR JONATHAN CHEE, SIXTH FROM LEFT, IN BEIJING

Congratulations to Jonathan Chee, who successfully applied to attend the 14th FIMSA Advanced Immunology Training Course in Beijing from 26-29 April. The course was hosted by the Chinese Society for Immunology, which covered the course registration and provided a travel bursary.



FROM LEFT: DAVE ALLEN, LAURIE KAZAN-ALLEN, TRACY HAYWARD AND MATTHEW TILBROOK

This newsletter is compiled by Tracy Hayward, Admin Officer, NCARD. Design by UniPrint, The University of Western Australia. Comments or enquiries: Ph. 08 6151 1078 Email: tracyhayward@uwa.edu.au



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In the spirit of attempting to have a photograph of Laurie Kazan-Allen in most, if not all, issues of the NCARD newsletter, this snapshot – taken by one of the staff at Café Anatomy in the Harry Perkins Institute, who cunningly included the daily specials – is included. Asbestos campaigner Laurie and her husband Dave, in Perth from the UK to visit family, met with Matthew Tilbrook and Tracy Hayward from NCARD for lunch and conversation on 26 April. Always a pleasure!



PROF BRUCE ROBINSON WITH ADAO AWARD

Our Director, Professor Bruce Robinson, together with his longtime friend and colleague Dr Marie-Claude Jaurand of the French Institute of Health and Medical Research in Paris, and Dr Raja Flores of Mount Sinai Hospital in New York, was presented *in absentia* with the Irving Selikoff Lifetime Achievement Award by the Asbestos Disease Awareness Organization at their conference held in April in Arlington, Virginia. The award is "in honour of (their) tireless dedication to increasing awareness about asbestos to eliminate diseases and research that leads to a cure."