The Marshall Centre Newsletter

The Marshall Centre for Infectious Diseases Research and Training

School of Biomedical, Biomolecular and Chemical Sciences

Volume 2, July 2010

Professor Geoffrey Shellam and Professor Barry Marshall, Co-Directors
The Marshall Centre for Infectious Diseases
Marshall Centre Contact Details

Postal address: The Marshall Centre for Infectious Diseases Research and Training
School of Biomedical, Biomolecular and Chemical Sciences, M502
The University of Western Australia
35 Stirling Hwy, Crawley WA 6009
Australia

Courier address: L Block, QEII Medical Centre, Monash Avenue, Nedlands WA

Marg Glenn, Administrative Assistant: The Marshall Centre
Phone +61 (08) 9346 2516 • Fax +61 (08) 9346 2912
Email: MarshallCentre@uwa.edu.au

Professor Geoffrey Shellam: Phone +61 (08) 9346 2050 • email geoff.shellam@uwa.edu.au

Rachael Bridges, Assistant to Professor Barry Marshall: Phone +61 (08) 9346 4815
Email: admin@hpylori.com.au
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Our History

The Marshall Centre for Infectious Diseases Research and Training was founded in 2007. It celebrates the award of the Nobel Prize in Physiology or Medicine to Professor Barry Marshall and Emeritus Professor Robin Warren for their ground-breaking research on *Helicobacter pylori*, proving that this bacterium is the cause of most stomach ulcers.

The mission of the Centre is to provide a focus for infectious diseases research and disease surveillance, postgraduate, professional and public education in infectious diseases, and enhancement of biotechnology.

Drawing upon existing research within Microbiology and collaborations within PathWest, the Centre includes research into Helicobacter, bacterial meningitis and gonorrhoea, herpes viruses, mosquito-borne viral diseases, gastrointestinal and environmental bacterial pathogens, and the surveillance of influenza and mosquito-borne viruses and other infectious agents. The biotechnology company Ondek undertakes translational research with *H. pylori* within the Centre.

At this early stage the Centre is developing fundraising strategies, a communication strategy, a visiting speakers program and consolidating its basic research, epidemiology and surveillance functions. Capacity building grants will be an important means of strengthening and extending the work of the Centre.

An important role of the Centre is the enhancement of postgraduate education within the School by providing not only additional research training opportunities but also facilitating a new postgraduate coursework programme, the Masters and Graduate Diploma in Infectious Diseases.

The Co-Directors of the Marshall Centre are Professor Barry Marshall and Professor Geoff Shellam. The administration assistant for the Centre (2½ days per week) is Marg Glenn and Professor Marshall’s assistant is Rachael Bridges (4 days per week).

Postgraduate Courses

The Masters and Graduate Diploma in Infectious Diseases began within the school in July 2007 following visits by Professor Geoff Shellam in 2006 to the London School of Hygiene and Tropical Medicine, the Liverpool School of Tropical Medicine and the Harvard School of Public Health. These course-work programs feature foundation units in medical microbiology and infectious diseases, mycology and parasitology, epidemiology, molecular microbiology, and bioinformatics followed by advanced units selected from one of two specialised streams (Medical Microbiology or Tropical Infectious Diseases). The courses are taught by staff in the Discipline of Microbiology and Immunology, various adjunct staff as well as a visiting faculty involving academics from the London School of Hygiene and Tropical Medicine and the University of Sydney.

Through its commitment to facilitate postgraduate and professional education, the Marshall Centre is involved in promoting and assisting the growth of this course.
Marshall Centre Students

September 2009 Graduating Students

It was a great finish to a lot of hard work for the first cohort of 8 students, who commenced study in July 2007, and graduated on September 15th 2009.

Pictured here from left to right are – Szuchen Lem, Rachel Koh, Tram Nguyen, Celia Bolden, Rozanah Syraj, Professor Barry Marshall, Professor Geoff Shellam, Chinmaya Chigateri, Jennifer Hu and Kesie Mearns.

Awards that were presented included:-

Medal for the Highest Aggregate in the Master of Infectious Diseases – Celia Bolden
Medal for Highest Aggregate in the Graduate Diploma in Infectious Diseases – Jennifer Hu
Certificate for Highest Aggregate in the Medical Microbiology Stream – Jennifer Hu
Certificate for Highest Aggregate in the Tropical Infectious Diseases Stream – Celia Bolden
Certificate for First Prize in the Research Project in Infectious Diseases – Chinmaya Chigateri
Certificate for Second Prize in the Research Project in Infectious Diseases – Peishan Koh
Certificate for First Prize in the Practicum in Infectious Diseases – Szuchen Lem
March 2010 Graduating Students

The second cohort of 10 students graduated in March of 2010. These were -

Master of Infectious Diseases (9) – Nagib Ahmed
Yu Leng Choo
Yee She Lee
Si Hong Lim
Vui Hung Lim
Karthik Raj Manoharan
Swee Ping Mark Tan
Dinh Tan Vu
Shani Wong

Graduate Diploma in Infectious Diseases (1) – Amuthaganesh Mathialagan

A Pre-Graduation social gathering was held in the Seminar Room in Microbiology and Immunology on March 16th for graduating students and their families and partners as well as current students. Professor Barry Marshall and Professor Geoff Shellam presented a variety of awards.
Awards that were presented:-

(a) Master of Infectious Diseases

Highest Aggregate Mark in 2009: Swee Ping Mark Tan

First Prize in the Research Project in Infectious Diseases

Swee Ping Mark Tan

Second Prize in the Research Project In Infectious Diseases - Yu Leng Choo

First Prize in the Practicum in Infectious Diseases

Shani Wong

Second Prize in the Practicum In Infectious Diseases - Si Hong Lim

(B) Specialised Streams

Highest Aggregate in the Tropical Infectious Diseases Stream - Shani Wong

Highest Aggregate in the Medical Microbiology Stream - Amuthaganesh Mathialagan
UWA Master of Infectious Diseases graduates apply their training in the health industry.

After graduating in mid-2009, Chinmaya Chigateri, a student in the first cohort of the Masters program spent time travelling to Singapore and around his native India. Shortly afterwards he was offered a position in a Not for Profit Organisation working on HIV in his home town of Bangalore. He now works in an Anti Retroviral Therapy Centre supported by the National AIDS Control Organisation of India. His Masters training was instrumental in his appointment to the position of Scientific Project Coordinator in which he is helping the centre in AIDS treatment and education. The Real Time PCR experience he gained at Pathwest Laboratories was also critical in enabling him to take up the position of Principal Scientist, in which he is responsible for setting up a Viral Load Testing lab for HIV.

Rachel Koh, another Master of Infectious Diseases graduate, has also moved on to apply her training in microbiology to the health field. After completing her course in mid 2009, Rachel was appointed to the position of Microbiologist at the Pfizer pharmaceutical manufacturing facility in Bentley, WA. At Pfizer, Rachel is responsible for monitoring the microbial burden at various points along the pharmaceutical production chain using a range of diagnostic techniques for the isolation and identification of bacteria and fungi which pose a threat to the quality of pharmaceuticals manufactured at the facility.
Current Students

The end of a busy second semester in 2009 was recently celebrated by students and Professor Geoff Shellam with a meal at the Amarin Thai Restaurant in Subiaco.
Grants

The Marshall Centre

Professor Geoff Shellam and Professor Barry Marshall, have obtained a LotteryWest Project Grant to “Develop a Strategic Plan for (a) Public and Professional Education and (b) Fundraising and Marketing Programmes for the Marshall Centre of Infectious Diseases”. Work is now underway on this project with the expertise of the business consulting company, Synovate.

The project is led by Synovate’s West Australian Managing Director, Geoff Reiser, and assisted by Business Consultant, Vicky Williams, in collaboration with Professor Geoff Shellam and Marg Glenn from the Marshall Centre.

Pictured above from left to right are Prof. Geoff Shellam, Ms Vicky Williams, Mrs. Marg Glenn and Mr. Geoff Reiser.

Professor Geoff Shellam, Dr Lee Smith, Dr Alec Redwood and Dr Ann Hill

Professor Geoff Shellam, Dr Lee Smith, Dr Alec Redwood and Dr Ann Hill are the Chief Investigators of an NH&MRC Grant “Effects of natural sequence variation on evasion of cytotoxic T lymphocytes by murine cytomegalovirus”. ($531,500, 2009-2011)

Professor Geoff Shellam, Dr Alec Redwood and Dr Lee Smith

Professor Geoff Shellam, Dr Alec Redwood and Dr Lee Smith are the Chief Investigators of an NH&MRC Grant “Determinants of cytomegalovirus salivary gland persistence”. ($544,500, 2009-2011)
**Associate Professor Christopher Peacock**

Associate Professor Christopher Peacock was recently awarded an ARC Future Fellowship to help improve the expanding area of pathogen genomics within the University of Western Australia. The research will initially build on his recent work on the serious global neglected parasitic disease leishmaniasis which affects millions of people in some of the poorest countries of the world. The parasite has a complex interaction with the host’s immune response cells, utilizing the mechanisms designed to destroy pathogens as a means to promote its own survival. Using a novel species of *Leishmania* recently discovered in Australia that only cause’s diseases in marsupials, he will undertake a whole genome comparative approach to identify critical genes involved in promoting human disease. This will help to identify putative determinants of pathogenicity and provide greater understanding of the mechanisms by which these globally successful parasites evolve to survive in different hosts.

This comparative genomic work will be used to help develop a practical line of research for disease intervention. Currently there are no vaccines available for immunising against any of the forms of leishmaniasis. By manipulating the expression of immunogenic proteins in this highly related marsupial pathogen, the Australian *Leishmania* species will be developed as a potential safe attenuated vaccine. Methodologies developed during this fellowship will be used to initiate comparative genomic projects for studies on other pathogens.

**Dr Charlene Kahler**

Dr Charlene Kahler has been awarded three NHMRC grants. The first will investigate the oxidoreductases of *Neisseria meningitidis* and their contribution to the pathogenesis of this organism. The second will be administered through Monash University with her collaborator, Prof John Davies, and will be on the role of the Maf surface adhesions in neisserial attachment and invasion of human cells.

**Dr Megan Lloyd**

Dr Megan Lloyd has been awarded a Raine Foundation Priming Grant “A mouse model for congenital human cytomegalovirus infection”. ($101,580, 2009-2010) Megan has also been granted a UWA Research Development Award for which the title is “Assessment of recent MCMV isolates for their ability to cross the mouse placenta and infect fetal mice as a model for HCMV fetal infection” for an amount of $23,632.00 (2010)
Overview

Facts and figures from the *Helicobacter pylori* Research Laboratory

The *Helicobacter pylori* Research Laboratory was started in late 1997 by Professor Barry Marshall at UWA on the QE II Medical campus to conduct research in the field of *Helicobacter pylori* and to collaborate with clinicians in the Gastroenterology Department at Sir Charles Gairdner Hospital.

Since 2006, this laboratory has been solely funded by the State Government and research has been limited to provide clinical assistance and advice on eradication therapy for patients who have antibiotic resistant strains of *H. pylori*. These patients are referred to Professor Barry Marshall by GPs and specialists from across Western Australia. 70% of referrals have been from GPs while the remainder have been referred to him by other gastroenterologists. These referrals have been mainly from the larger Perth metropolitan region but have also been from regional areas such as Albany and Bunbury as well as a few from interstate.

The numbers of patients referred, and hence the number of patients who have had their antibiotic resistance isolates of *H. pylori* successfully eradicated, has risen each year as shown in the table below.

<table>
<thead>
<tr>
<th></th>
<th>2010 (as at 18/5/10)</th>
<th>2009</th>
<th>2008</th>
<th>2007</th>
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<td>7</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>25</td>
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<tr>
<td><em>H pylori</em> not eradicated - UBT positive</td>
<td>1</td>
<td>2</td>
<td>5</td>
<td>5</td>
<td>1</td>
<td>0</td>
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<td>8</td>
<td>6</td>
<td>6</td>
<td>8</td>
<td>6</td>
<td>40</td>
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<tr>
<td>Therapy not taken</td>
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<td>TOTAL</td>
<td>40</td>
<td>125</td>
<td>91</td>
<td>68</td>
<td>64</td>
<td>39</td>
<td>427</td>
</tr>
</tbody>
</table>

(UBT = Urea breath test)
Dr Charlene Kahler and the Meningitis team

Charlene was invited to attend the 50th Anniversary 2008 of the University of Southern Technology China/UWA joint symposium on Frontiers in Life Sciences in June 2008. She was also an invited symposium speaker at the Australian Society of Microbiology conference in Melbourne later that month. She presented her work on the role of lipooligosaccharide in attachment and invasion of meningococci into human cells.

She was the convener and organiser of the 2nd Amanda Young Foundation Meningococcal Disease Conference held at the Burswood Center in July of 2008. This conference had 5 local speakers who were Dr Gary Dowse from the West Australian Department of Health, Dr Clayton Golledge from Sir Charles Gardner Hospital, Dr Dave Burgner from the University of Western Australia, Dr Ronan Murray from the Royal Perth Hospital, and Dr Peter Richmond from Princess Margaret Hospital. Prof Robert Booy Co-Director of the National Centre for Immunisation Research and Surveillance (NCIRS) was the invited speaker. The conference attracted approximately 80 participants who heard about the local epidemiology of meningococcal disease, clinical presentation and treatment, recent advances in vaccine development and the health risks to survivors of the disease.

Jessica Scoullar, Susannah Piek and Stephanie Bell attended and presented posters at the CBSM in September 2008. Stephanie was awarded the Australian Society of Microbiology Poster prize for her poster presentation. Charlene was also an invited symposium speaker at the 16th International Pathogenic Neisseria conference (IPNC) in Rotterdam in September 2008 and presented her work on oxidoreductases, a joint project with Dr Martin Scanlon at the Victorian College of Pharmacy, Monash University. Jessica and Susannah presented their posters covering the same topic and were recipients of travel awards by the IPNC committee. Jessica's manuscripts on this topic have been published in the Journal of Biological Chemistry and Journal of Molecular Biology.

2009 has also proven to be a very busy year for this team. Chiang Lee started in the Kahler lab in June of 2009 and will work on investigating the oxidoreductases in meningococci. Lee has a diverse background having completed his PhD at the University of Queensland and working in Canada as a post-doc. He brings his considerable experience in molecular biology to the lab.

Stephanie Bell was the recipient of two post graduate student travel awards: the UWA convocation travel award and the Millis-Colwell Australian Society of Microbiology Award. Both were used for Stephanie to work in Dr Yih-ling's laboratory at Emory University (Atlanta, USA) and to attend the American Society of Microbiology Annual General Meeting in Philadelphia in May where she presented her work in a poster session. Stephanie and Susannah were selected to give oral presentations of their work at the Australian Society of Microbiology meeting in Perth in July 2009. Charlene was the Division 4 Chairperson and was pleased to invite her collaborator, Dr David Stephens (Vice President, Research and Innovation, Emory University) to present his research at this meeting. Stephanie was invited to represent the Discipline of Microbiology and Immunology to give an oral presentation of her work at the School forum in October. Lea Ann Kirkham who had joined the lab in 2007 has since left for a position at the Telethon Institute for Child Health. Reshme Nair and Yuni Phang have recently completed their postgraduate degrees.
2010. Stephanie has been awarded the ASM Becton Dickinson Travel Award for her presentation at the Sydney ASM. We welcome Janessa Pickering who has started her Honours project on meningococcal attachment to adenoids collected from patients. Charlene will be on sabbatical this year and will work in the laboratories of Professor Mike Apicella (Iowa University) and Professor Russell Carlson (University of Georgia) for 13 weeks.

**Associate Professor Cheryl Johansen and the Arbovirus Surveillance and Research Laboratory (ASRL)**

The Arbovirus Surveillance and Research Laboratory (ASRL) staff, under Associate Professor Cheryl Johansen, are always very busy. Cheryl and Sam McFall are pictured below tagging chickens before sending them up to Derby. They have just finished sending up replacement flocks of chickens in preparation for the onset of the wet season and peak season for mosquitoes and mosquito-borne disease in the north of Western Australia. They have sentinel chicken flocks at about 30 locations throughout northern WA, from Kununurra to Leonora to York. The chickens are tested fortnightly for detection of antibodies to Murray Valley encephalitis and Kunjin viruses, two viruses that can cause severe disease, particularly in young, elderly and immunocompromised people.

The program has been in place for more than 25 years, with the support of the WA Department of Health, and the many volunteers who care for the chickens and take serum samples for testing. The program provides advance warning of increased activity of these viruses, enabling the Department of Health to warn residents and visitors in affected areas of the increased risk of mosquito-borne disease.
Associate Professor Manfred Beilharz and his team - What is happening with viral infection control?

Can a lozenge stop colds and flu interfering with you?

This is the question researchers Associate Professor Manfred Beilharz, Clinical Professor David Smith and PhD student Alayne Bennett hope to answer shortly when the results of their study, investigating the use of lozenges containing low dose interferon alpha as a preventative against colds and flus, become available.

The double blinded trial, funded by a State Health Research Advisory Council (SHRAC) research translation grant, required participants to take one lozenge daily and report on their cold and flu symptoms using a weekly online questionnaire. A/Prof Beilharz credits the successful recruitment period, which saw the study reach its maximum enrolment of 200 volunteers, to increased public interest brought on by the H1N1 pandemic. The study volunteers have been really enthusiastic about the study and are just as eager as the researchers to see the results.

People may be familiar with interferon therapy as a treatment for Hepatitis C, MS and some cancers were patients are injected with doses of up to 10 million international units per week. Our approach is unique in that the lozenges contain a very low dose of interferon, only 150 international units. Nearly 20 years ago, a colleague of A/Prof. Beilharz, Dr. Joseph Cummins discovered interferon in the nasal secretions of cows developing respiratory infections during shipping. This led to the development of a theory that interferon in the nasal secretions was part of an early warning system, alerting and arming the body against viral infection. A/Professor Beilharz pioneered research in support of this notion studying oral low dose interferon therapy in murine models of infection. To date acceptance of low dose oral interferon therapy by mainstream medicine has been slow, however if this study shows a beneficial effect, there is a significant level of local and international interest to push this research further.
The Cytomegalovirus Research Group (CRG) headed by Professor Geoffrey Shellam had a very productive 2009. We started two new NHMRC funded projects this year that were awarded in 2008. One of these projects seeks to understand the role that murine cytomegalovirus (MCMV) immune evasion genes play on avoiding host responses through the cell surface molecules major histocompatibility class I. This project is headed by Dr Lee Smith and we were very fortunate to welcome Laura Masters, a previous Honours student, to the projects as a PhD student. Laura was successful in obtaining a prestigious Australian Postgraduate Award (APA) funded by the Federal Government for her PhD.

The other NH&MRC project seeks to determine why certain strains of MCMV persist for longer in the salivary gland of the host. This is a particularly important point as it is from this organ that the virus transmits to new hosts. This project is headed by Dr Alec Redwood and we were lucky to have Fern Smyth study components of this work for her Honours in 2009. Jackie Robbmay is continuing this project in 2010 for her Honours work.

The laboratory also has a Raine Priming Grant project that was awarded to Dr Megan Lloyd in 2008 that started in 2009. This project aims to produce a mouse model of congenital infection that can be used to model human disease. This study was also the subject of an Honours project that was conducted by Ms Michelle Fisher. We wish both Fern and Michelle success in their new positions at PathWest.

Two other projects are running in the CRG that are being undertaken as PhD projects. Mrs. Andrea McWhorter’s project is investigating the dynamics of MCMV infection of a host when more than one strain of virus is causing the infection. This has been a very interesting project where we have seen either neutral or competitive interactions between the viral strains. Mrs. McWhorter is the recipient of an IPRS and is in her 3rd year of her PhD. In 2009 she was awarded a $5000.00 Grants for research student training (GRST) from UWA to be used for genomic sequencing of MCMV. She was also the winner of a Poster Prize for her presentation at the Australian Virology Group meeting in Lorne.

Ms Baca Chan is into her second year of her PhD assessing the role of a viral gene called m15 in the pathogenesis of MCMV infection. Baca is also a recipient of a APA and in 2009 was awarded a Federation of Immunological Societies of Asia-Oceania (FIMSA) travel Scholarship to attend the advanced 10th FIMSA Advanced Immunology Training course in on Tangalooma Island in Queensland from the 3-6th of December and whilst there presented her work at the 39th Annual Australasian Society for Immunology (ASI) meeting at Surfers Paradise.

In other news Dr Alec Redwood was appointed WA councilor to the ASI for the period 2010-2012, taking over from Dr Delia Nelson, and attended the 2009 ASI conference with Ms Baca Chan in QLD. Dr Redwood and Dr Smith from the Cytomegalovirus Research Group have both been given an opportunity to present their work at two different sessions at the up coming International Herpesvirus Workshop in Utah which is scheduled from the 24th to 28th July 2010.
The laboratory was well represented at National meeting in 2009. Dr Alec Redwood attended and presented at the TLROZ 2009 meeting at Surfers Paradise in November. The laboratory was also well represented at the Australian Virology Group (AVG) meeting in Lorne Victoria where, Dr Megan Lloyd, Dr Lee Smith, Dr Alec Redwood and Mrs. Andrea McWhorter presented aspect of the work of the Group. Finally Dr Alec Redwood and Ms Baca Chan presented their work at the Australasian Society for Immunology meeting at Surfers Paradise. Dr Redwood also chaired a session of the Satellite meeting on Infectious Immunology at the ASI meeting and attended his first ASI councilors meeting prior to the commencement of the annual conference.

The group had 3 publications accepted in 2009.

Dr Allison Imrie and the Dengue virus group

Dagwin Luang Suarkia

Dagwin Luang Suarkia comes to UWA from the Institute of Medical Research in Goroka, Papua New Guinea, where he has been Laboratory Head of Molecular Microbiology and Virology. After completing his undergraduate studies in Microbiology at the University of Papua New Guinea in 1992, Dagwin studied Sepik Virus for his Masters degree at the University of Queensland in 2003 under the supervision of Dr John Mackenzie. His PhD project will focus on seroprevalence and molecular epidemiology of dengue viruses in PNG’.
Dr Hugh Jones

Adjunct Clinical Senior Lecturer Dr Hugh Jones (pictured left courtesy of Frances Andrijich Photography) is always busy but in recent times he has also found time to author or co-author three chapters in “A History of Parasitology in Australia and Papua New Guinea” published by the Australian Society for Parasitology in August of 2009. The chapters were – Beginnings (Chapter 1), Parasitology in Western Australia (Chapter 20) and Parasitology in Papua New Guinea (Chapter 22).

He also co-authored two chapters in “Health of Antarctic Wildlife” published by Springer in July/August 2009. The chapters were – Diseases of Antarctic Seabirds (Chapter 2) which was also co-authored by Professor Geoff Shellam, and Diseases and Parasites of Antarctic and Sub-Antarctic Seals (Chapter 3).

In September of 2009 Hugh also presented a paper at the ANZ Society for the History of Medicine biannual conference entitled “Papua New Guinea: Malaria, New Guineans and Europeans in the nineteenth century.”

Kevin Li - PhD

Kevin Li has completed his PhD entitled "A study on the use of Helicobacter pylori as a live bacterial vaccine delivery system" under Professor, Barry Marshall, Professor. Barbara Chang and Dr. H Windsor recently. Kevin LI would like to take this opportunity to thank supervisors and staff in Microbiology for all their kind help during his study.

After Kevin obtained his Bachelor of Medicine in China in 1999, he started his Masters research on the establishment of Helicobacter pylori infection model using the Mongolian gerbil and the construction of vaccines against Helicobacter pylori using live Salmonella as a carrier. Kevin Li joined Helicobacter pylori research laboratory as an academic visitor in 2003. He characterized a new gastric Helicobacter from the Australian marsupial Fat-tailed Dunnart and this result was presented at the 5th Western Pacific Helicobacter congress 2004. Kevin Li started his PhD in early 2006.
Dr Kate Hammer and Professor Tom Riley

Principal researcher Dr Kate Hammer has been examining the properties of tea tree oil for several years and her colleague, Professor Tom Riley, has been part of a group of scientists undertaking tea tree oil trials at the University since the early 1990’s. Resistance to antibiotics, including antibacterial and antifungal agents, is an enormous problem in health-care,” Dr Hammer said.

The discovery of antibiotics revolutionized medicine last century and she is hoping tea tree oil will slow their relatively recent decline in efficacy due to increasing resistance. He study will test the hypothesis that low levels of tea tree oil can slow the rate at which microorganisms become resistant to antibiotics.

The group has already shown that tea tree oil is effective in combating common pathogens such as E. coli and golden staph bacteria, as well as yeasts, the fungi responsible for tinea, and anaerobic organisms – and Dr Hammer’s work will go further by testing the efficacy of the oil in reducing resistance acquisition, expanding the usefulness of antibiotics. Dr Hammer said the oil destroyed bacteria and fungi by damaging their cell membranes beyond repair.

“The oil molecules are small enough to insert into the lipid bilayer of the cells. This disruption of the physical barrier between the cell and its external environment may result in greater quantities of antibiotic entering the cell, meaning faster cell death and less opportunity for resistance to arise,” she said.

Her hope is that in the future some topically applied antibiotics will be administered as a combination therapy – a cream with a tea tree oil component. An example of a common combination therapy is the use of benzoyl peroxide combined with an antibiotic for the topical treatment of acne. The research project is funded by the Rural Industries Research and Development Corporation (RIRDC).

Acknowledgement for the content of the above article is given to Janine MacDonald (UWA Public Affairs) from a UWA Media Statement October 21st 2009.
**PathWest Update**

Dr David Smith (pictured right) and his PathWest team has been extremely busy, in particular, working with the influenza pandemic which has generated a lot of work for everyone. They are very proud to say that they were able to rapidly develop tests for the detection and identification of the new virus, including tests with the potential to be deployed to remote areas. They also identified the first Australian case of oseltamivir-resistant pandemic influenza. Co-infection with MRSA and pandemic influenza has also posed a large challenge.

PathWest are involved in a wide range of growing international collaborations which include –

1. The interaction of bacteria and viruses in the upper respiratory tract of children (in collaboration with TICHR)

2. The universal paediatric vaccination program for influenza (WAIVE) which is ongoing in collaboration with TICHR, PMH and CDC.


4. The investigation of undiagnosed encephalitis in PNG and Sri Lanka, in collaboration with Curtin University and overseas groups

5. Identification of unknown arboviruses in collaboration with Curtin University, Australian Animal Health Labs, Columbia University and others

6. Use of data linkage to identify health outcomes in relation to infectious diseases (in collaboration with TICHR)

In addition to these projects, they have been involved in the oral interferon trial with Manfred Beilharz and his team, the molecular epidemiology of influenza A in WA and its implications for the understanding and prevention of influenza, the role of the rhinoviruses in respiratory diseases and enhancing the understanding of the molecular epidemiology of flaviviruses in Australia.
Members of the PathWest Division of Microbiology and Infectious Diseases were busy in regional WA and overseas this year. In January, a small team travelled to Central Sri Lanka with the deployable molecular lab as part of the ongoing WHO lab capacity-building project.

They spend a frantic week running six different molecular methods including environmental threat assessment, culture identification and genotyping protocols for melioidosis, leptospirosis, scrub typhus and tuberculosis. During this time they joined staff from the University of Peradeniya, who were running an MSc course for candidates from all over the country (as pictured here on the left).

In May, members of the Division took the deployable lab to Broome and demonstrated a pandemic influenza PCR assay during the Tropical, Emergency and Disaster Medicine conference and tropical medicine summit co-hosted by PathWest and the Australasian College of Tropical Medicine. A conference report will appear in the Medical Journal of Australia. The influenza assay was subsequently deployed to Central Queensland during the height of the national epidemic, and H1N1/09 infection confirmed in a field setting.

Later, in July, Tim Inglis visited the National Institute of Communicable Diseases in Johannesburg to work with A/Prof John Frean on molecular methods for confirmation of emerging bacterial diseases (as pictured here on the right). The PathWest Burkholderia pseudomallei confirmatory assay was successfully introduced. Tim filled in his spare time working through samples in the national Parasitology reference lab.

The PathWest group also joined a national consortium in a successful bid organised by the Department of Prime Minister and Cabinet for US Federal Government funding to fully sequence B. pseudomallei genomes. PathWest is a participant in two of the three subprojects and will lead the biogeographic attribution subproject.
Sichuan Earthquake Scholarship Winners

Who can forget the news on the afternoon of May 12th 2008 of the Sichuan earthquake which measured 7.9 on the Richter scale killing some 70,000 people and injuring more than 370,000 with more than 18,000 listed as missing? The earthquake left millions of people homeless and was the deadliest and strongest earthquake to hit China since 1976.

On October 1st 2008, Professor Barry Marshall, on behalf of The University of Western Australia, announced that a UWA postgraduate scholarship would be offered to two students from the Wenchuan County, or another part of the earthquake-affected area, studying at Sichuan University, as a contribution to the reconstruction in the aftermath of the Sichuan earthquake.

The scholarships are in the field of infectious diseases and the successful candidates were Li Hong and Liao Tingting. They will work in the Marshall Centre with Professor Barry Marshall as their postgraduate supervisor.

Li Hong

Li Hong who arrived in Perth at the beginning of October 2009, was born in 1982 in Sichuan P.R. China. He gained his B.A. in Clinical Medicine at Sichuan Provincial Hospital and the North Sichuan Medical College. In 2006 he embarked on a Masters Degree at Sichuan University majoring in Infectious Diseases. Li Hong loves being in Perth and is impressed with the local people in general but particularly at the Marshall Centre where he finds them all very friendly and helpful. He says he is also very happy to be working in well equipped laboratories and now that his project has been decided he says things are just going “perfectly”!
Amber (Liao) Tingting

The other recipient of the Sichuan earthquake scholarship is (Amber) Liao Tingting. Unfortunately, she will not be arriving in Perth until mid 2010 but she says she is very excited and can’t wait to meet everyone! Amber was born in 1984 and has a very extensive academic background which includes a Bachelor of Engineering and Master of Science (Research) as well as being awarded the Bristol University Award for Academic Excellence in 2007 and the John Brown Fellowship in 2006.

New Staff

Hoyung Lee

Hoyung Lee has come to the Marshall Centre on November 23rd 2009 on an Occupational Traineeship Research Programme and will be replacing Se-Hoon Park who has completed his contract period and has now returned to Korea. Like Se-Hoon, Hoyung comes to the Marshall Centre from the R & D Centre at Korea Yakult. He has an impressive educational background from the Pusan National University and the Gwang-ju Institute of Science and Technology.

Phillip Young

Phil Young has recently joined Ondek in a part time financial administration capacity. His accountancy skills were well developed as a consultant, chief financial officer and finally managing director in the private sector during the heady days of the eighties. A change of direction in the early nineties saw him nurturing his own small business; heavily involved in R&D and the highs and lows associated with success.

After a major health scare in 2005 Phil advises that he took stock of his priorities and chose to stay at home with his children while his wife completed her degree.

He says that he has completed a full circle, returning to his roots and brings experience, integrity, sound advice and a steady hand as he embraces this exciting new challenge.
**Clarissa Goh**

Clarissa Goh is from Singapore and graduated from UWA with a Bachelor of Science Degree in Molecular Biology and Biotechnology in March 2010. She was keen to accept when an opportunity arose to become a Graduate Research Assistant in the Marshall Centre of Infectious Diseases and Training in April 2010. She says it is a huge opportunity to nurture her passion in research sciences and to gain exposure in a highly reputable research centre. To pursue Medicine or achieve a PhD in Infectious Diseases will be the next level in her future plans.

**Hannah Montgomery**

Hannah Montgomery recently graduated from the University of Western Australia with a Bachelor of Science and a Bachelor of Commerce. She says she had always wanted to pursue a career in medical research so was very excited to be back at UWA, working with the Cytomegalovirus Research Group.

**Michelle Middleton**

Michelle Middleton joined the Ondek team on October 19th 2009 as an Animal Technician. She graduated from the Canberra Institute of Technology with a Diploma of Animal Technology in 2003 and finally moved to Perth in January of 2008 after extensive travel overseas.

Michelle’s main roll is in in-vivo work and she hopes to expand her animal skills as well as develop her laboratory skills while working with the excellent Ondek team.
Marg Glenn

Marg Glenn has extensive experience in Executive Assistance, Office Management and Information Technology. Marg first joined the Marshall Centre in an administration role in February 2009 when she filled in while Rachael Bridges, Professor Barry Marshall’s secretary, was on maternity leave. After Rachael returned to work in early September 2009, Marg commenced a half time role as Administration Assistant for the Marshall Centre as well as her other half time role at the Office of the Nobel Laureates.

Dr. Yakhya Dieye

Dr Yakhya Dieye obtained his PhD in Molecular Genetics from the Paris-Sud University, Orsay, France in 2002. Since then he has held postdoctoral positions at the Department of Microbiology, Ohio State University (2002-2005) and at the Biodesign Institute, Arizona State University (2005-2008). Dr Dieye’s main area of expertise is in Bacterial Genetics and Molecular Biology. He has worked on the use of bacteria as a delivery vehicle for biological molecules and on the pathogenesis of Salmonella. Dr Dieye joined Ondek Pty. Ltd. as a Senior Scientist in Molecular Biology in February 2009.

Dr. Hans-Olof Nilsson

Dr Hans-Olof Nilsson joined Ondek Pty Ltd in March of 2009 as a Senior Scientist in Microbiology. He holds a Masters (1999) and PhD Degree (2004) in Medical Microbiology from the Department of Laboratory Medicine, Lund University, Sweden. Dr Nilsson has extensive expertise in medical microbiology, particularly with Helicobacter species. His research has focused on virulence factors of pathogenic group A and B streptococci and Helicobacter pylori and Helicobacter bacteriology and pathogenesis, including transmission and environmental survival. Dr Nilsson has also developed experimental H. pylori and natural Helicobacter species rodent models and has applied DNA-based technology and genotyping methods to characterise Helicobacter infections.
Staff Farewells

Sadly, we have had to say farewell to some wonderful colleagues who have moved on over the last year or more. A few of these are –

**Dr Kazufumi Kimura**

Dr Kazufumi Kimura came to the Marshall Centre from Japan as a Gastroenterology Research Fellow and during his time here worked on the *H pylori* trial as well as answered the “Frequently Asked Questions” from the *H pylori* website page. Dr Kimura and his family have now returned to Japan.

**Dr Tobias Schoep**

Dr Tobias Schoep worked with Ondek for approximately 4 years as a Research Scientist. Dr Schoep and his wife have now relocated to Santa Barbara in the US to further his research career in the lab of Michael Mahan at the University of California working on Salmonella genetics and vaccines.

Dr Schoep is pictured here on the left with Professor Barry Marshall, Dr Alma Fulurija and Dr Mohammed Benghezal at his leaving lunch celebration.

**Jessica Needle**

Jessica Needle was the first Administrative Assistant appointed to the Marshall Centre and, one of her many achievements during that time, was being responsible for publishing the first edition of the Marshall Centre Newsletter. Jessica decided to move on early in 2009 to further her career and is now working at the WA Museum.
**Dr Peter Yen**

After spending approximately 35 years working at UWA, many colleagues were sad to say goodbye to Senior Scientific Officer, Dr Peter Yen who has now taken extended leave which will then lead on to a well earned retirement. Dr Yen was bid farewell by a large crowd of colleagues and friends at a morning tea. In speeches given by both John Devlin and Professor Geoff Shellam, Peter’s dedication and professionalism were highlighted as well as the wonderful rapport that he has always had with students.

Dr Peter Yen is seen here with Professor Geoff Shellam and Associate Professor Liam O’Connor.

**Dr Se-Hoon Park**

Dr Se-Hoon Park has now completed his time with Ondek on an Occupational Traineeship Research Programme and has returned to the R & D Centre at Korea Yakult.

This position has now been filled by Hoyung Lee.