Welcome to the first issue of the Marshall Centre Newsletter! The Marshall Centre for Infectious Diseases Research and Training was founded in 2007 to celebrate the award of the Nobel Prize in Physiology or Medicine to Professor Barry Marshall and Emeritus Professor Robin Warren. Dr Marshall and Dr Warren carried out ground-breaking research on *Helicobacter pylori*, proving that this bacterium is the cause of most stomach ulcers. A generous grant of $4M was provided by the Federal government for infrastructure, and $1.5M was supplied by the University to support administration and research positions including a Senior Lecturer in infectious diseases. The State Government has also generously supported Professors Marshall and Warren in various ways, and in addition has provided $450,000 over three years for the *H. pylori* lab within the Marshall Centre. Affiliated with the Centre is a new endowed Chair, the LeSouef Chair in Tropical Microbiology. The Marshall Centre was approved as a UWA Centre by the Academic Council in November 2007.

This is an exciting time for the Centre, as we grow in size and make plans for the future. The Marshall Centre will provide a focus for infectious diseases research and epidemiology and attract funds, research staff and international visitors to Perth. This will enhance the research and development into *Helicobacter pylori* and other infectious agents, encouraging internationally competitive research and attracting the interest of biotechnology companies. The Centre will also be active in postgraduate, professional and public education in the area
of infectious diseases.

The Centre’s principal goals and objectives are as follows:

• Build the capacity to perform world class infectious diseases research and disease surveillance for a variety of infectious agents.
• Facilitate the development of new vaccines and diagnostic technologies for *Helicobacter pylori* and other pathogens.
• Facilitate postgraduate and professional training.
• Provide a vehicle for public education in infectious diseases.

The Co-Directors of the Marshall Centre are Professor Barry Marshall and Professor Geoff Shellam. The administration assistant for the Centre is Jessica Needle, and Professor Marshall’s assistant is Rachael Bridges.

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**Members of the Centre**

Members of the Marshall Centre are carrying out research projects in a wide range of areas:

- Professor Barry Marshall, Dr Mohammed Benghezal, Dr Alma Fulurija, Dr Tobias Schoep, Dr Helen Windsor: Research on *Helicobacter pylori* vaccines and therapeutics.
- Professor Geoff Shellam, Dr Alec Redwood, Dr Lee Smith, Dr Megan Lloyd: Research into the pathogenesis of cytomegalovirus; viral immune evasion proteins; herpesviruses as vaccine vectors.
- Dr Manfred Beilharz: Research on the development of bacterial vaccines; control of viral infection by regulatory T cells.
- Dr Christine Carson and Dr Kate Hammer: Research into the use of natural products in antimicrobial therapy.
- Associate Professor Barbara Chang: Research into the pathogenesis of respiratory bacterial infections.
- Dr Gerry Harnett (PathWest): Development of improved PCR and other assays for detecting viruses in clinical specimens.
- Dr Tim Inglis (PathWest): Research on environmental bacterial pathogens, especially *Burkholderia* (melioidosis), and bacterial pathogenesis; rapid detection of infectious bio-threats; professional and public education.
- Dr Hugh Jones: Research into parasite infections; Aboriginal health.
- Dr Cheryl Johansen: Research into mosquito-borne Murray Valley encephalitis virus and Ross River viruses; research into vector competence using the insectary.
- Dr Charlene Kahler: Meningitis caused by *Neisseria meningitidis*; molecular basis of pathogenicity.
- Dr Michael Lindsay (Heath Department of WA): Research into mosquito-borne Murray Valley encephalitis and Ross River virus; research into vector competence.
- Professor Thomas Riley: research on *Clostridium difficile* as well as a variety of other bacterial pathogens of humans; the use of natural products as alternative therapies for microbial diseases; public and professional education.
- Dr Harry Sakellaris: Research into the pathogenesis of gastrointestinal bacterial infections; Shigella, enterotoxigenic E.coli.
- Dr David Smith (PathWest): Management with Geoff Shellam of the Arbovirus Surveillance Unit; management of the Influenza Surveillance Unit. Co-ordination of the teaching partnership between PathWest and the School of Biomedical, Biomolecular and Chemical Sciences; improved diagnostic tests.
• Professor Geoff Stewart: Development of bacterial vaccines; inflammatory responses at epithelial surfaces in response to bacterial products.

With these exciting projects, the Marshall Centre is promoting a vigorous research environment, attracting high quality research staff in infectious diseases and facilitating training by attracting PhD students to these laboratories.

Building

The building work for the new Marshall Centre for Infectious Diseases Training and Research was completed in December 2007, and many staff have moved into their offices. The Centre is based within the School of Biomedical, Biomolecular and Chemical Sciences on the second floor of the Microbiology & Immunology building in L Block, in the QEII Medical Centre. Most of the major equipment has been installed and the move is almost complete. The new Centre consists of three state-of-the-art research laboratories (shown here), an equipment room, a meeting room, and offices. However, while the Marshall Centre’s directorate, administration and several laboratories will be run from the new facility, its members are spread across several buildings, including Microbiology & Immunology, PathWest and the School of Biomedical, Biomolecular and Chemical Sciences on the main campus.

Seminar Series

A Marshall Centre Seminar Series has been established. This has been jointly funded by the School and the Australian Society for Microbiology (ASM). A mailing list has been compiled to publicise these seminars; if you would like to be added to this list, please contact Jessica Needle at jessican@cyllene.uwa.edu.au. There have been three seminars thus far, with approximately 40-50 people attending each seminar:

• Professor Doug Berg, Washington University, St Louis, USA
• Dr Richard Ferrero, Monash University
• Associate Professor Suresh Mahalingam, University of Canberra

Seminars are planned for 2008 include:

• Professor Jacques Schrenzel, Genomic Research Laboratory, Geneva. Professor Schrenzel is studying the pathogenesis of _S. aureus_ using genomic approaches and is interested in technology transfer to clinical microbiology (identification, susceptibility and typing).
• Professor James Paton, University of Adelaide. Professor Paton’s research interests include pathogenesis and prevention of pneumococcal disease, Shigella and Listeria as invasive bacterial pathogens, pathogenesis of Shiga toxigenic Escherichia coli infections, receptor mimic technologies and bacterial surface polysaccharides.
The Neville Stanley Oration

The 2007 Neville Stanley Oration was held in the 15th of November. The speaker was Professor Anne Kelso, Director of the World Health Organisation Collaborating Centre for Reference and Research on Influenza, Melbourne. The topic of the Oration was 'Influenza: Changing Virus in a Changing World'. Professor Kelso discussed the scientific and social challenges presented by this constantly changing virus, why the risk of a pandemic is being taken seriously, and how the World Health Organisation and the Australian Government are monitoring and responding to this threat.

![Photo of the Neville Stanley Oration speakers](image)

Left to right: Professor Geoffrey Shellam, Clinical Associate Professor David Smith, Professor Fiona Stanley, Associate Professor Barbara Chang, Professor Anne Kelso and Professor Barry Marshall.

The Neville Stanley Oration is a public lecture held to honour the memory of Professor Neville Stanley, the foundation Professor of Microbiology at the University of Western Australia. The Oration was jointly supported by the Discipline of Microbiology and Immunology, the Marshall Centre and the School of Biomedical, Biomolecular and Chemical Sciences.

Postgraduate Courses

A new course, the Masters / Graduate Diploma of Infectious Diseases, was launched in 2007 in the Discipline of Microbiology & Immunology. Through its commitment to facilitate postgraduate and professional education, the Marshall Centre is involved in promoting and assisting the growth of this course.

Dr Greg Bancroft from the LSHTM visited the Marshall Centre in September 2007 to teach the vaccines component of the Masters of Infectious Diseases. As noted below, Professor John Ackers also assisted in the Masters teaching. We hope to make these annual visits, forming a valuable bond between the LSHTM, the School of Biomedical, Biomolecular and Chemical Sciences and the Marshall Centre for Infectious Diseases Research and Training.

Distinguished Visitors

The Marshall Centre was successful in its application to the UWA Distinguished Teachers Fund to bring a senior parasitologist from the London School of Hygiene and Tropical Medicine (LSHTM) to assist with the teaching of the Masters course. Emeritus Professor John Ackers visited UWA in March and worked with the Centre for the Advancement of Teaching and Learning to deliver talks and workshops on subjects such as distance learning and
providing a supportive learning environment for international students. He also gave lectures and practical classes, and assisted the School in its development of parasitology courses.

A Raine Visiting Professorship has been granted to Professor Stipan Jonjic, Professor and Chairman of the Department of Histology and Embryology at the University of Rijeka in Croatia (shown left). He will visit the Marshall Centre and the School of Biomedical, Biomolecular and Chemical Sciences in October 2008. Professor Jonjic and his colleagues are interested in several aspects of cytomegaloviral (CMV) infections. CMV is an important human pathogen causing disease in neonates as well as in those who are immunosuppressed or who have HIV/AIDS. Professor Jonjic will deliver the Raine Lecture as well as a more specialised lecture in the Discipline of Microbiology and Immunology regular weekly seminar program and a second specialised lecture as part of the Marshall Centre for Infectious Diseases Research and Training Seminar Series.

**Spotlight on Research: Charlene Kahler**

Dr Charlene Kahler is a Senior Lecturer in the Discipline of Microbiology and Immunology in the School of Biomedical, Biomolecular and Chemical Sciences. Her area of research is bacterial pathogens causing sepsis.

The major aims of this research are to

- understand the structure and function of endotoxin and its role in bacterial pathogenesis.
- investigate the bacterial regulatory networks that control virulence of bacterial pathogens.
- examine the interaction of bacterial pathogens with the human host.

Dr Kahler is performing research on *Neisseria meningitidis* and *Neisseria gonorrhoeae*. Case fatality rates for meningococcal disease remain at around 10%, while gonorrhoeal infection often results in infertility in women; Dr Kahler's research is providing significant advances which will contribute to the understanding and ultimately the control of these threats to human health. Her busy lab is well-funded by local, national and international agencies, and also includes Dr Lea-Ann Kirkham and three PhD students, Jessica Scoullar, Stephanie Bell, and Susannah Piek.
Spotlight on Research: David Smith

Dr David Smith is a Clinical Associate Professor in the Discipline of Microbiology and Immunology and the Clinical Director of Microbiology at PathWest. Dr Smith manages the Influenza Surveillance Unit, and with Professor Geoff Shellam, co-manages the Arbovirus Surveillance Unit. Dr Smith’s role within the Marshall Centre also involves liaising with other organizations, such as the BioSecurity CRC at Curtin University (of which he is a member), and developing relationships with the School of International Health at Curtin University in infectious disease surveillance. Dr Smith is also researching improved diagnostic tests.

Dr Smith also has the important responsibility of coordinating the teaching partnership between PathWest and the School of Biomedical, Biomolecular and Chemical Sciences. This relationship is one of the strongest features of the new Masters / Graduate Diploma course in Infectious Diseases.

Official Opening Ceremony

Plans are afoot for the official opening of the Marshall Centre, to take place mid-year. Watch this space for more details, coming soon!

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