Our Vision
Excellence and innovation in health and medical research – Better health services – Healthier Illawarra community

Our Mission
To build a centre of excellence and innovation in health and medical research, targeting health improvements through early intervention and preventative health care
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Message from IHMRI’s Executive Director, Professor Don Iverson

Major advances in our understanding of health and medical issues are reported in the scientific literature and popular press on a regular basis. Some of these advances are at the fundamental level, while others relate to the diagnosis and treatment of disease.

The next decade will see many new discoveries which will alter the way diseases are identified and treated.

Academic and research institutes around the world are contributing to these discoveries. Some of these institutes are large with a long history of contributing to health and medical advances, while others are small and relatively new.

IHMRI belongs to the latter category. While still in its infancy, it is nonetheless making meaningful and significant contributions to health and medical research, as well as health policy.

Several of these contributions and achievements are noted in this report. They include national awards and fellowships, publications in high-impact journals, the receipt of nationally competitive grants and research contracts and the involvement of IHMRI researchers in national and international research bodies.

As IHMRI moves into its next stage of development, the scope and importance of its research is certain to grow and IHMRI researchers will continue to make contributions that attract national and international recognition.

Several academic and research institutes organise their research around ‘themes’ or ‘challenges’ in order to facilitate multi-disciplinary research and make notable contributions in identified areas.

IHMRI adopted this approach at its inception. During the reporting period, IHMRI’s research program encompassed six themes: Cancer Continuum, Healthy Ageing, Infectious Diseases, Metabolic Conditions, Neuroscience and Mental Health and Primary Care and Rural Health. The three cross-cutting themes were: Human Genetics, Nutrition and Population Health.
In 2011-12, IHMRI’s Scientific Advisory Committee and board reviewed these themes, consolidating them to four: Ageing and Chronic Conditions, Diagnostics and Therapeutics, Health Care Delivery and Neuroscience and Mental Health. These will come into effect on 1 July 2012, and I look forward to seeing the outcome of this consolidation.

IHMRI’s mission includes a commitment to *Excellence and innovation in health and medical research, supporting better health services, leading to a healthier Illawarra community*. In 2011-12, IHMRI identified a flagship project entitled: ‘Health Connect: A Chronic Disease Prevention Program for the Illawarra Shoalhaven Population’.

This longitudinal intervention will test the effectiveness of a community-based intervention developed to improve the health status of the local community. Health Connect is unique in many ways, including the intervention and the approach devised to create sampling units for the study.

IHMRI is different from most health and medical research institutes in that it involves a partnership with the local health district and the university, with its network of researchers extending across the region.

As IHMRI continues to mature, the researchers in this network will increase their contributions to IHMRI’s research themes and make discoveries with the potential to improve the health of people locally, within Australia and throughout the world.
During the 2011-12 financial year, the IHMRI board was pleased once again to guide a young institute through the next stages of its development. Further progress was made and research activity flourished in the new IHMRI facilities with initiatives and programs in clinical research a highlight.

The board met on five occasions during the year, including a very valuable meeting with the Scientific Advisory Committee (SAC) in December 2011. The SAC assisted the board in selecting a flagship population health project from two very worthy proposals developed by multi-disciplinary teams of academic and clinician researchers.

Expressions of Interest were received by the board from researchers interested in delivering a community-wide lifestyle intervention that would address a health issue of significance in the region. The intention was to fund the project over a period of five years as IHMRI’s flagship program.
The selected project, ‘Health Connect: A Chronic Disease Prevention Program for the Illawarra Shoalhaven Population’ will support and encourage the maintenance of healthy weight among 25 to 50-year-olds.

It was a great pleasure working with the SAC, so ably led by Dame Bridget Ogilvie. The board is most appreciative of the expertise and guidance provided by its members.

The year also brought some significant changes in the board’s membership. Professor Gerard Sutton retired as Vice-Chancellor of the university and subsequently resigned as one of the university-nominated directors on the IHMRI board. He was replaced by incoming Vice-Chancellor, Professor Paul Wellings, who took up his position in January and brings a wealth of knowledge and experience to the board.

Professor Sutton played a major role in advocating for a health and medical research institute in the region and was instrumental in securing university and NSW Government funding for IHMRI’s facilities. In June 2012, the IHMRI building was named the Gerard Sutton Building in recognition of his great contribution. It is most fitting that we express our sincere appreciation, on behalf of everyone involved with IHMRI, for his wonderful efforts and the legacy he left behind.

IHMRI’s inaugural Chairman, Mr George Edgar, also retired this year to pursue other governance duties. The board and management of IHMRI wishes to acknowledge the fine leadership that Mr Edgar provided over his four years as Chairman. He provided valuable guidance and brought great expertise and professionalism to the governance of IHMRI (see page 39).

Finally, the board would like to take this opportunity to acknowledge the energy and drive that Executive Director, Professor Don Iverson, brought to the growth and development of IHMRI this year, along with his research leadership and management teams.

Professor Iverson’s energy and drive is infectious and we are seeing many research groups and new collaborations striving to achieve ambitious research goals in tackling health issues of global relevance, while continuing to support and foster a healthier local population.
The population health flagship will drive IHMRI’s vision of building a healthier Illawarra community.

Program overview

IHMRI’s research program leverages the diverse interests and specialisations of researchers within the university and health service as well as primary care and other community settings throughout the Illawarra.

The program structure recognises that research can encompass fundamental or basic medical science, clinical investigations and/or population-based studies. It creates a framework for collaboration, draws upon and develops research capacity in the region, is shaped by the health status and disease prevalence in the Illawarra and aims to deliver improved clinical practice and health service delivery in the region.

During the reporting period, IHMRI’s research program encompassed six themes:

- Cancer Continuum
- Healthy Ageing
- Infectious Diseases
- Metabolic Conditions
- Neuroscience and Mental Health
- Primary Care and Rural Health

Complementing efforts in these six themes were three cross-cutting themes: Human Genetics, Nutrition and Population Health.

In December 2011, IHMRI’s Scientific Advisory Committee and board reviewed the theme structure and recommended that IHMRI focus on its point of difference as a regional institute by developing a clearer research story that would consolidate the six research themes into four.

Furthermore, a major population health program tapping into the clearly-defined and accessible local population, would complement the four themes and incorporate a flagship project to drive IHMRI’s vision of building a healthier Illawarra community.
Significant achievements in population health

Achievements during 2011-12 set the foundations for further growth and development in IHMRI’s population health program.

Highlight: In February 2012, IHMRI announced that ‘Health Connect: A Chronic Disease Prevention Program for the Illawarra Shoalhaven Population’ had been selected as IHMRI’s population health flagship project. Selected as part of the review of the research program, it followed a call for Expressions of Interest which encouraged applicants to develop proposals around health problems prevalent in the region and which could be impacted through a comprehensive intervention strategy within three to five years.

IHMRI’s Scientific Advisory Committee and board considered the proposals in December, selecting Health Connect as the project that best demonstrates IHMRI’s commitment to improving the health status of Illawarra residents.

It will involve an intervention study of diet, physical activity and education over five years and leverages established relationships and an interdisciplinary framework involving clinicians, dieticians, exercise physiologists, psychologists, public health experts, statisticians and community health advocates.

The research team, comprising Professor Linda Tapsell, Clinical Professor Maureen Lonergan, Associate Professor Vicki Flood, Associate Professor Joseph Ciarrochi, Dr Greg Peoples, Clinical Professor Jan Potter and Senior Dietician Marianna Mitosavljevic, are now working with external expertise and other collaborators to refine and progress the proposal.
**Highlight:** The Wollongong Birth Cohort Study, a project supported by an IHMRI Project Grant in 2010-11, progressed through ethics approval and was renamed Illawarra Born in 2011-12. This new longitudinal study was further supported by IHMRI to address a gap in our knowledge about the long-term health of the Illawarra community. It will capitalise on a stable population base and explore the environmental and genetic factors affecting human development within family units and across three generations. It will see university-based investigators working alongside co-investigators from the ISLHD to better understand the factors that lead to mental illness, obesity, diabetes, heart disease, cancer and other health issues. The first field research stage will commence in 2012-13 with a pilot study involving 50 pregnant women. Over time, the study will build a critical piece of population health research infrastructure for use by many IHMRI researchers seeking to test novel theories and uncover new findings on mental, physical and social health and wellbeing.

**Highlight:** A blood pressure awareness program entitled Healthy Hearts, Healthy Minds involved a community awareness campaign to increase knowledge among 45 to 64 year-olds about the link between hypertension and dementia and to encourage community members to get their blood pressure checked regularly. The program, funded by NSW Health and run by the ISLHD in collaboration with the Centre for Health Initiatives (UOW) also involved a consultation and implementation strategy to engage clinicians in the health service. Public forums involving verbal presentations, written information and free blood pressure checks were offered in community centres throughout the Illawarra.

The Healthy Hearts Healthy Minds campaign drew attention to the link between hypertension and dementia.
The Neuroscience and Mental Health theme seeks to discover the causes of serious mental illness and neurological disorders in order to develop treatments and intervention strategies that will improve the lives of people living with a mental illness.

Research activities in this theme are broad, ranging from investigations into the neuropathology of schizophrenia to treatment options for those with personality disorders. The theme includes studies on cannabis use, youth mental health, dementia and the development of new models of psychological care. Exploration also extends to the integration of intelligent polymers to manage neurological conditions; notably epilepsy and spinal cord injuries.

**Highlight:** An innovative, interactive youth mental health conference was held at the UOW in June 2012. Supported by IHMRI, Healthy Minds Theatre explored mental health topics through a theatre piece entitled *Understanding Depression: Fill in the Blank*. Based on the true story of Dan, a young person who suffered clinical depression, actors told Dan’s life story on stage with the audience invited to suggest ways for him to overcome his difficulties.

The event was organised by the Wollongong Suicide Prevention Network in partnership with the ISLHD and funded by the Department of Health and Ageing. The format is now being considered by schools around the region.

**Highlight:** Dr Nadia Solowij, an internationally-recognised expert in understanding the short and long-term effects of cannabis use on the brain, and its role in triggering psychosis in vulnerable individuals, won an Australian Research Council Future Fellowship in 2011-12. Her research will examine the effects on brain cells through to whole brain function in humans to determine how cannabis use may lead to impaired thinking or psychological symptoms and why cannabis might affect individuals in different ways.

**Highlight:** The Project Air Strategy for Personality Disorders is a joint initiative of IHMRI and NSW Health. Established in 2010, the project aims to cultivate a more personality disorders-friendly health service which, in turn, will enhance treatment options for people with personality disorders and better support their families and carers.

During 2011-12 the project team exceeded many of the pilot program’s objectives and gained a better understanding of the issues associated with personality disorders. Now, with the support of clinicians in the health service, psychiatric consultants and national and international experts, the team is developing new treatment guidelines and approaches to managing personality disorders. The team also helped to establish Gold Card Clinics in regional hospitals to provide brief interventions and rapid follow up to adults and young people in crisis, as well as supporting and developing existing programs in mental health services, including Dialectical Behaviour Therapy (DBT) and workshops for families and carers.

**Highlight:** An IHMRI-based team, led by Associate Professor Chao Deng, is investigating the neuropharmacological mechanisms underlying the pathophysiology of schizophrenia and examining antipsychotic medications with the aim of increasing their efficacy while reducing the side-effects. Associate Professor Deng’s expertise was recognised during 2011–12 with an invitation to co-edit a Special Topic for the journal, *Frontiers in Cellular Neuroscience*.

**Highlight:** Neuroscience and Mental Health theme director, Professor Brin Grenyer, is foundation Chair of the Psychology Board of Australia and Advisory Editor of *Psychotherapy Research*. This year he was appointed as a scientific committee member for the 6th World Congress of Psychotherapy in Sydney and is on the organising committee of the 5th International Congress on Licensure, Certification and Credentialing in Psychology in Stockholm, 2013.
The Healthy Ageing theme brings medical bio-scientists, psychologists, biomechanics experts, rehabilitation specialists, nutritionists, general practitioners, neurosurgeons, community health and aged care workers together to develop better models of aged care.

The theme builds upon already strong links between academic researchers and clinicians to develop and implement intervention studies, discover the mechanisms underpinning age-related diseases and develop new ways to improve the treatment and management of these diseases.

**Highlight:** The ‘Driving and Dementia – Enabling early retirement from driving’ project brought researchers with skills in behavioural science, law, medicine, nursing, occupational health, psychology and road safety together to draft a Decision Aid booklet to help doctors and families support dementia sufferers in making the decision to stop driving. The project was supported by Alzheimer’s Australia, the University of Tasmania, local councils and Roads and Marine Services, with a trial of the booklet about to commence in the Illawarra.

**Highlight:** The extracellular chaperone protein, clusterin, has been identified as a newly-discovered risk factor in Alzheimer’s disease. Healthy Ageing Scientific Director, Professor Mark Wilson, worked alongside a team of international scientists to identify a new method of examining the interactions between human clusterin and the Alzheimer’s disease-associated amyloid beta peptide using highly-sensitive single-molecule fluorescence methods. Their work was published in the *Nature* journal, *Nature-Structural & Molecular Biology*.

**Highlight:** In November 2011, Dr Heath Ecroyd and Dr Todd Mitchell were awarded Australian Research Council Future Fellowships. Dr Ecroyd is investigating the role that chaperone proteins play in Alzheimer’s and Parkinson’s disease while Dr Mitchell is studying the lipidomics of vision. Dr Justin Yerbury also won an inaugural Australian Research Council Discovery Early Career Researcher Award to investigate the causes of Motor Neurone Disease, including the gene mutations that cause homeostasis disruptions.

**Highlight:** Alarmingly high rates of malnutrition in older patients admitted to both acute care and rehabilitation hospitals was identified by UOW and ISLHD researchers in 2010. A follow-up study funded by an IHMRI Small Grant in 2011-12 found that patients discharged from hospital in a poor nutritional state experienced a downward spiral of ill health, higher recurrences of hospital admissions and a threefold risk of mortality. The researchers have now completed the first phase of an action-based research program to incorporate nutrition screening into a general practice setting.

Melinda Stuckey (Northern Illawarra Meals on Wheels) and a study client. Image courtesy Kirk Gilmour, *Illawarra Mercury*.
Highlight: The REACH Out in Dementia training initiative sought to improve end-of-life care for end-stage dementia sufferers living in regional residential aged care facilities. The research team conducted a randomised controlled trial to develop and test a toolkit to support facility staff in recognising end-of-life stage and the role of palliative care in dementia. The study showed significant reductions in hospital and emergency department presentations without any compromise in mortality. Staff confidence was also enhanced.

The toolkit design was presented at the 2012 Annual Scientific Meeting of the Australian and New Zealand Society of Geriatric Medicine, with three papers now pending publication.

Highlight: Professor Mark Wilson, Dr Heath Ecroyd, Dr Andrew Aquilina, Dr Justin Yerbury, Dr Chris Brownlee (Garvan Research Institute) and Dr Ian Blair (ANZAC Research Institute) successfully applied for funding from the Motor Neurone Disease Research Institute of Australia to pursue a project entitled ‘Protein aggregation and chaperones: key players in MND’.

While evidence suggests that inappropriate aggregation of protein molecules is a primary contributor to MND pathology, this project will seek to gain a better understanding of the molecular processes involved, including the role of chaperones.

Highlight: A new collaboration led to the discovery of a naturally-occurring protein that may protect the brain against lipid peroxidation, a significant factor in Alzheimer’s disease, dementia and ageing. Called Apolipoprotein D (apoD), the protein appears to detoxify free radicals which attack lipids in the brain and contribute to the death of neurons important for memory and cognition.

This new role for apoD was discovered by ARC Future Fellows, Professor Brett Garner, Associate Professor Aaron Oakley and Dr Heath Ecroyd, along with PhD student Surabhi Bhatia.

Highlight: Members of the Healthy Ageing theme established the Proteostasis and Disease Research Centre in 2011-12 to pursue collaborative projects and provide a focussed and supportive environment to cultivate proteostasis research in Australia. They begin organising the inaugural Proteostasis and Disease Research Symposium in Wollongong in November 2012. The symposium attracts the interest of international experts.
Infectious Diseases

Scientific Director: Associate Professor Paul Keller
Medical Director: Professor Julian Gold

The Infectious Diseases theme focuses on the design and development of new antiviral and antibacterial drugs for the prevention and treatment of a range of existing and emerging infectious diseases. It includes interventions to reduce the rate of hospital-acquired infections.

The theme involves fundamental studies on the molecular mechanisms of bacterial pathogenesis (Group A Streptococcal and emerging multi-drug resistant bacteria), clinical trials examining the impact of medications on neurological conditions such as Multiple Sclerosis as well as the evaluation of evidence-based guidelines to prevent hospital-acquired infections.

The theme forges links between medicinal chemists, molecular biologists and clinical scientists and promotes national and international collaborations.

Highlight: In September 2011, IHMRI’s bacterial pathogenesis group presented research on Streptococcus at the international Lancefield conference in Palermo, Italy. This included research on an NHMRC-funded project characterising streptokinase, a clot-degrading enzyme produced by Group A Streptococcus, and research from an IHMRI-funded pilot project examining the use of microemulsions as topical anti-infective drug delivery vehicles. A collaboration with clinicians at The Wollongong Hospital and researchers at the University of Melbourne was also established to investigate these microemulsions for anti-cancer compounds and self-adjuvanting vaccine peptides.

Highlight: Dr Martina Sanderson-Smith was awarded an NHMRC grant with collaborators at the Queensland Institute of Medical Research to develop a Group A Streptococcus (GAS) vaccine. She also spent time at the prestigious University of Notre Dame in Indiana (US) where she has an ongoing collaboration with researchers at the WM Keck Centre for Transgene Research. This group is studying the structure and function of proteins involved in blood coagulation and blood clot dissolution. Dr Sanderson-Smith was invited to establish a research program focusing on GAS.
Reducing the rate of hospital-acquired infections drives research within the theme.
Metabolic Conditions

Scientific Director: Professor Xu-Feng Huang
Medical Director: Professor Robert Moses

Obesity and lifestyle-related conditions are common in the Illawarra and throughout the Australian population, increasing the burden of disease and death. Understanding the causes of debilitating conditions associated with metabolic disorders and developing more effective treatments and prevention strategies is the aim of the Metabolic Conditions theme.

Since nutrition, exercise habits, physiology and body characteristics have a significant influence on these metabolic conditions, researchers from biology, psychology, chemistry, materials science, exercise science, food science and clinical medicine collaborate around this theme.

Specific areas of research include the development of laboratory models of diet-induced obesity, functional foods for preventing and managing weight gain, the role of lipids in the development of various pathologies including insulin resistance, obesity and cardiovascular disease, as well as exercise and dietary interventions.

Highlight: Research Fellow and NHMRC Australia-China Exchange Training Fellow, Dr Yinghua Yu, successfully applied to the Diabetes Australia Research Trust to pursue a project entitled: ‘How do distinct fatty acids affect central leptin sensitivity and glucose intolerance in obesity and type 2 diabetes?’ The project will determine which types of fatty acids cause central leptin resistance and which promote central leptin sensitivity, leading to reduced food intake and improved glucose tolerance.

The results of Dr Yu’s Australia-China Exchange, involving a successful clinical trial investigating the serum levels of phospholipid fatty acids in Chinese men with metabolic syndrome, were also published in *Nutrition Research* in February 2012.

Highlight: The results of an IHMRI-supported study entitled ‘Understanding the underlying mechanisms behind the reduced body weight gain after consumption of shiitake mushrooms – a rat study’ were accepted for publication in the *Journal of Obesity* in 2011-12. In the study, rats on a high fat diet were given low, medium and high doses of Shiitake mushroom powder for six weeks. The results showed that rats on the high dose had the lowest body weight gain, lower fat deposits and lower plasma triacylglycerol levels.

The researchers were Associate Professor Barbara Meyer, Dr Jason Chen, Professor Xu-Feng Huang and Dr Arthur Jenkins.
Highlight: With new collaborative opportunities arising from IHMRI’s networking and support activities, researchers within the Centre for Translational Neuroscience (CTN) continued to attract funding in 2011-12. The CTN also extended its reach to translate basic scientific research into more applied clinical contexts. The group expanded to include specialists in molecular biology, medical imaging, chemistry, drug delivery and materials science. The centre received several internal and external grants during the year, enabling targeted research on the pathological mechanisms of diseases such as schizophrenia, obesity and obesity-related colon cancer with the aim of translating findings into novel pharmacological and dietary interventions for human trials.

Highlight: IHMRI researcher and Director of the UOW Interdisciplinary Educational Research Institute (IERI), Associate Professor Tony Okely, was awarded a prestigious Heart Foundation of Australia fellowship in December 2011 to continue his research into promoting physical activity and reducing sedentary behaviour in children and adolescents. While continuing to work with regional education and community-based groups, the IERI also continued to collaborate with highly-ranked international institutions, including Stanford University (US) and the University of Manchester (UK).

Highlight: Nutrition cross-cutting theme leader, Professor Linda Tapsell was awarded Honorary Life Membership of the Dietitians Association of Australia (DAA) in recognition of her contribution to DAA activities and to nutrition and dietetics in Australia. Since 2003, Professor Tapsell has been the Editor in Chief of *Nutrition & Dietetics* and is leading the Scientific Program Committee for the International Congress of Dietetics, to be held in Sydney in late 2012.

Associate Professor Tony Okely is interviewed about his work on reducing childhood obesity.
Cancer Continuum

Scientific Director: Associate Professor Marie Ranson
Medical Director: Professor Philip Clingan

The broad aims of the Cancer Continuum theme are to understand the biological processes underlying cancer, improve its detection and treatment, reduce cancer risk and translate technological advances into clinical practice.

The theme brings together biologists, chemists, physicists, clinicians and radiologists to look at basic cell and molecular processes in cancer, develop new drugs, new delivery methods and improved radiotherapy, nuclear medicine and imaging techniques. It includes behavioural interventions, health informatics and clinical trials.

In 2011-12, the Cancer Continuum group continued to capitalise on its unique clustering of expertise to pursue projects that represent niche or under-researched areas.

Highlight: A novel formulation for the treatment of metastatic colorectal cancer was granted patent rights by European, American and Chinese patent offices in 2011-12.

Emeritus Professor John Bremner, Professor Philip Clingan (Cancer Continuum Medical Director) and Dr Julie Locke were co-inventors on the patent which arose from research conducted by Associate Professor Marie Ranson (Cancer Continuum Scientific Director) and Dr Tamantha Stutchbury between 2003 and 2010.

The main benefit of Fluorodex is that it can deliver an effective chemotherapeutic regimen that patients can tolerate over repeated treatment cycles.

Highlight: In 2011-12, a group of biomedical scientists joined forces with clinicians at The Wollongong Hospital and several private cancer clinics to form a new Cancer Drug Discovery Group to develop novel anti-cancer drugs and treatments.

Founded by Vice-Chancellor Postdoctoral Fellow, Dr Kara Perrow, the multi-disciplinary group will seek to improve drug design and delivery through the development of polymer and nanoparticle carriers and novel delivery methods. The research will cover a wide range of ideas and topics, including the re-formulation of commonly-used chemotherapy drugs to reduce toxicity, the use of natural products and the introduction of new therapeutic vaccines.
Primary Care and Rural Health

Scientific Director: Dr Andrew Bonney
Medical Director: Dr Andrew Dalley

People who live in regional and rural areas often have difficulty accessing primary and specialty medical care. There are also shortages of nursing and allied health professionals.

IHMRI’s Primary Care and Rural Health theme addresses these and other health issues by bringing the disciplines of general practice, nursing, epidemiology, population health, informatics, health economics, social marketing and behavioural sciences together to take a strategic approach to research. The theme taps into the Graduate School of Medicine’s (GSM) mission to build capacity in regional and rural health workforces and the Illawarra Shoalhaven Local Health District’s commitment to improving the quality of care and range of health services to regional residents.

Highlight: The Illawarra and Southern Practice Research Network (ISPRN), supported by IHMRI and the GSM, was launched in February 2011 with Department of Health and Ageing funding. It continued to grow in 2011-12, bringing general practitioners, practice nurses and practice managers across the region together to discuss primary care research and develop their research skills through workshops and online channels. As at June 2012, 33 practices had registered with the network.

ISPRN’s second conference was held in May 2012, with two ISPRN member-driven projects identified for development in 2012. In June 2012 ISPRN Director, Professor Andrew Bonney, presented ‘Development of an Australian practice based research network in a resource limited context’ to the North American Primary Care Research Group.

Highlight: ISPRN demonstrated an early impact in building research capacity within general practices with four ISPRN member-driven projects supported with literature reviews, research protocols and ethics applications in 2011-12. They were:

- Development of an insulin self-management competency assessment tool for type 2 diabetes mellitus patients (Diana Fornasier, Professor Andrew Bonney and Dr Judy Mullan).
- The effect of regular weighing by a GP on weight maintenance in 20-70 year-olds (Dr Duncan McKinnon, Professor Andrew Bonney, Dr Stephen Barnett and Darren Mayne).
- Chaperone use in Australian general practice (Dr Lucie Stanford, Dr Rowena Ivers and Professor Andrew Bonney).
- A pilot study to assess feasibility of regular health assessments by practice nurses to reduce emergency admissions of high risk elderly patients (Dr Sunil Vyas and Professor Andrew Bonney).
The opening of IHMRI’s Clinical Research and Trials Unit (CRTU) in 2010 was welcomed by researchers and clinicians around the Illawarra, providing much-needed infrastructure to support those undertaking clinical research.

Dedicated solely to research, the 1500m² unit has its own personnel and resources to support the professional conduct of trials.

The first sponsored trial commenced in the CRTU in January 2011. Since then, the unit has generated a stronger income stream through sponsored trials and garnered consistently positive feedback from sponsors about the quality of its data collection and the speed with which queries were resolved.

Despite being a newly-established clinical trial site, the CRTU has performed extremely well in recruiting for sponsored trials, particularly when compared with its well-established counterparts.

To support further growth in 2011-12, the CRTU employed a full-time Principal Investigator and a Clinical Operations Coordinator with extensive experience in Quality Assurance to continually develop processes and procedures in line with best practice.

**Achievements**

- In 2011-12, the CRTU launched a Hypertension Clinic to evaluate the effectiveness of National Heart Foundation guidelines for managing hypertension. Targeting GPs, it represents a coordinated approach between primary and secondary care in the Illawarra Shoalhaven and is led by CRTU Director, Professor Wilf Yeo, Foundation Professor, Medicine and Clinical Pharmacology at the Graduate School of Medicine and Director, Medicine and Emergency, ISLHD. The clinic commenced in early 2012 with regional GPs engaged in the program through communications and an information session. A poster on the clinic will be presented at an international hypertension conference in September 2012.

- The CRTU launched a new participant database to recruit and keep potential participants up-to-date about forthcoming trials.

- The unit completed its first sponsored trial, testing the effectiveness of a novel combination of current therapies to lower cholesterol in the blood, with initial recruitment targets almost doubled for this trial.

**Policy leadership**

**CRTU Director and Clinical Policy Advisor, Professor Wilf Yeo.**

As a practicing clinician in the health service, I understand the importance of clinical research in raising the standard of clinical care that we provide to patients in the Illawarra.

The role of Clinical Policy Advisor is vital in building relationships and fostering collaborations between academic researchers and clinicians in the health service.

I work closely with IHMRI’s Executive Committee and Scientific Policy Advisor. Together we will continue working hard to further develop IHMRI’s research capacity and create an atmosphere that fosters good medical research of benefit to the local community.
Investigator-initiated trials

The 2011-12 year brought an increase in the number and quality of investigator-initiated trials hosted in the CRTU. Studies conducted in the reporting period include:

- Impact of fruit flavonoids on memory and cognition in older adults with mild to moderate dementia (Investigators: Associate Professor Karen Charlton and student, Katherine Caldwell).

- Effect of low intensity exercise on quality of life and physical function in community dwelling sedentary older adults: a randomised controlled trial (Investigators: Dr Herb Groeller and student, Chiaya Noradechanunt).

- The Illawarra Longitudinal Study of Successful Ageing: Pilot Study (Investigators: Professor Don Iverson and Research Assistant Andrea Hemmerich).

- Sleep and weight change in first year university students (Investigators: Dr Christopher Magee and Research Assistant, Laura Robinson).

- Development of eccentric exercise regression equations (Investigators: Marc Brown, Bryn Nicholas and Dr Greg Peoples).

Sponsored trials

Merck, 118 (Lipid Study)
The lipid study tested the efficacy of a novel combination of existing therapies in reducing the level of cholesterol in the blood. Thanks to the overwhelming community response, the CRTU recruited at 170 per cent for this study.

GlaxoSmithKline, Zoster-022/Zoster-006 (Shingles Vaccine)
The potential of a vaccine to protect against shingles has been demonstrated in a number of studies. This study seeks to evaluate the efficacy of a new shingles vaccine. The objective is to compare a vaccinated cohort against a placebo group and to evaluate the protection provided by the vaccine.

Novotech, ALLO-401 (Gout Study)
This study is evaluating the safety and efficacy of the drug Allopurinol, the current standard of care treatment for gout, combined with a daily dose of Colchicine, the current standard of care for gout flares. The CRTU’s recruitment rate was significantly higher than most other sites.

Novotech, CLEAR II (Lesinurad Study)
This phase III study, which commenced in May 2012, is reviewing the safety and efficacy of Lesinurad, a new product for the treatment of gout specifically targeting people who have an inadequate hypouricemic response to the current standard of care (Allopurinol).

Novotech, MBA-001-010 (Cold Sore Study)
Abalone haemocyanin, derived from live abalone, is a copper-containing respiratory protein. Biomedical research has found that mollusc haemocyanin has strong immunotherapeutic effects to treat tumours and viral infections. This study seeks to evaluate the efficacy of abalone haemocyanin in reducing the duration of cold sore episodes.
The IHMRI Research Network is a community of academic researchers, clinicians and other health professionals with a common interest in advancing health and medical research in the Illawarra.

The network provides a structure to connect researchers across institutional boundaries and facilitates the coordination of health and medical research in the region. It also provides opportunities for information sharing, networking and engagement through regular events and seminars.

In 2011-12, the number of network members attending these events grew, particularly in the second half of the year. IHMRI was also able to capitalise on visits by international researchers by inviting them to present at networking events.

Highlights this year included well supported presentations by retiring UOW Vice-Chancellor, Professor Gerard Sutton and Professor Inga Neumann from the University of Regensburg in Germany.
Membership growth

There has been significant growth in the number of IHMRI Research Network members in the reporting period. At the end of June 2012, the network had an overall membership of 764, including 544 researchers and 221 associates – see breakdown opposite.

This compares to an overall membership of 628 in 2010-11.

Following a review of the theme structure, it is anticipated that the composition and number of members will change in 2012-13 as members are surveyed about their new theme preferences and interests.

IHMRI networking evenings 2011-12

IHMRI networking evenings provide an opportunity for academic researchers and clinicians to network and exchange information in a relaxed setting. They typically start with a 20-30 minute presentation by a prominent researcher, followed by refreshments to facilitate networking.

Events

<table>
<thead>
<tr>
<th>DATE</th>
<th>SPEAKER</th>
<th>TOPIC</th>
<th>IN ATTENDANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>14 September 2011</td>
<td>Professor Alison Jones, Dean, UOW Graduate School of Medicine</td>
<td>The influence of the Graduate School of Medicine on health care and clinical research in the Illawarra and beyond.</td>
<td>Approx 60</td>
</tr>
<tr>
<td>30 November 2011</td>
<td>Retiring UOW Vice-Chancellor, Professor Gerard Sutton</td>
<td>End of year celebration and volunteer thank-you.</td>
<td>Approx 125</td>
</tr>
<tr>
<td>7 March 2012</td>
<td>Dr Robert J. Marshall, Rhode Island Department of Health (US)</td>
<td>Changing health behaviours through public education interventions and social marketing.</td>
<td>Approx 70</td>
</tr>
<tr>
<td>19 June 2012</td>
<td>UOW Vice-Chancellor, Professor Paul Wellings</td>
<td>Vision for the university and the contribution that health and medical research will play in that vision.</td>
<td>Approx 110</td>
</tr>
</tbody>
</table>

Attending an IHMRI networking evening (l to r) Dr Kara Perrow, Emeritus Professor John Bremner and Dr Danielle Skropeta.
IHMRI seminars 2011-12

The objective of IHMRI’s seminar series is to stimulate and inspire network members with presentations from leaders representing a broad range of scientific and business disciplines. The hour-long lectures also provide an opportunity for networking.

<table>
<thead>
<tr>
<th>DATE</th>
<th>SPEAKER</th>
<th>TITLE</th>
<th>IN ATTENDANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>9 August 2011</td>
<td>Professor Kathy Eagar, Australian Health Services Research Institute, UOW</td>
<td>The Australian health system - national reform, local challenges.</td>
<td>Approx 65</td>
</tr>
<tr>
<td>18 October 2011</td>
<td>Professor Brett Garner, Principal Research Fellow, IHMRI</td>
<td>Alzheimer’s disease: the lipid connection.</td>
<td>Approx 35</td>
</tr>
<tr>
<td>13 February 2012</td>
<td>Professor Inga D. Neumann, University of Regensburg, Germany,</td>
<td>The neurobiology of stress.</td>
<td>Approx 125</td>
</tr>
<tr>
<td>1 May 2012</td>
<td>Associate Professor Tony Okely, Interdisciplinary Educational Research Institute, UOW</td>
<td>Preventing childhood obesity – what does the evidence really say?</td>
<td>Approx 45</td>
</tr>
</tbody>
</table>
### Academic seminars and symposiums supported by IHMRI in 2011-12

<table>
<thead>
<tr>
<th>DATE</th>
<th>SPEAKER</th>
<th>TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 July 2011</td>
<td>Dr Tom Hannan, Washington University School of Medicine, St. Louis (US)</td>
<td>Mucosal immune checkpoints in chronic and recurrent cystitis.</td>
</tr>
<tr>
<td>6 July 2011</td>
<td>Dr Neal H. Hooker, CJ McNutt Professor of Food Marketing, Saint Joseph’s University, Philadelphia (US)</td>
<td>Assessing food innovation: a look at Australia.</td>
</tr>
<tr>
<td>8 July 2011</td>
<td>Associate Professor Chris Georgiou and Dr Angelique Hoolihan</td>
<td>Clinicians in Research symposium - bridging the gap between clinical practice and research.</td>
</tr>
<tr>
<td>8 December 2011</td>
<td>Dr Rainer Landgraf, Professor of Neurobiology, Max Planck Institute of Psychiatry, Germany</td>
<td>Genetic and epigenetic determinants of anxiety.</td>
</tr>
<tr>
<td>17 May 2012</td>
<td>Dr Sheila G. West, Associate Professor of Biobehavioral Health and Nutritional Sciences, Pennsylvania State University (US)</td>
<td>Effects of foods and nutrients on vascular reactivity to psychological stress: new clinical studies.</td>
</tr>
<tr>
<td>28 June 2012</td>
<td>Dr Anna Kemp, Assistant Professor, School of Population Health, University of Western Australia (Visiting Research Fellow, IHMRI).</td>
<td>What linked datasets can do for you!</td>
</tr>
</tbody>
</table>
In 2011-2012 IHMRI continued to support multi-disciplinary research and pilot projects targeting health and medical issues relevant to the region and beyond. IHMRI Research Network members who are active in one or more research themes, and who are working with at least three other members, are invited to apply. The grants enable researchers to gather data to apply for competitive external grant programs.

During the reporting period, IHMRI funded 14 projects across three different schemes, awarding over $227,000 in amounts ranging from $7,000 for small preliminary projects to $25,000 for more substantial pilot projects in areas of strategic importance, including a targeted call for grants led by a clinician-investigator.

These funds were made available from the UOW’s Medical Research Support Fund.

**IHMRI small grants**

**Title:** Development of an inducible animal model for acute post-streptococcal glomerulonephritis.  
**Investigators:** Dr Vidiya Ramachandran, Dr Jason McAthur, Dr Marina Sanderson-Smith, Dr Ronald Sluyter.

**Title:** Investigation of metabotropic glutamate receptor 5 alterations in psychiatric disorders.  
**Investigators:** Dr Kelly Newell, Dr Elisabeth Frank, Associate Professor Chao Deng, Dr Jenny Wong.

**Title:** Designing a conducting polymer-based device to control schizophrenia-related neuronal development.  
**Investigators:** Dr Zhixiang Wu, Dr Elise Stewart, Dr Yinghua Yu, Associate Professor Robert Kapua.

**Title:** Effect of bacterial infection of urothelial ecto-ATPase activity.  
**Investigators:** Dr Kylie Mansfield, Dr Jessica Hughes, Professor Kate Moore, Professor Paul Else.

**Title:** Application of biocompatible nano-ceramics containing high atomic number elements for the treatment of radio-resistant tumours.  
**Investigators:** Dr Michael Lerch, Dr Moeava Tehel, Dr Konstantin Konstantinov, Dr Stephanie Corde Tehel, Dr Susanna Guatelli, Professor Anatoly Rozenfeld.

**Title:** Effectiveness of infusional versus oral forms of 5-fluorouracil in the treatment of colorectal cancer in clinical practice – an epidemiological and health economics study.  
**Investigators:** Associate Professor Marie Ranson, Professor Simon Eckerman, Dr Gillian Stillfried, Professor Phillip Clingan.

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**Executive leadership**

**IHMRI Deputy Executive Director (Clinical), Professor Alison L Jones**

The importance of health and medical research in serving our regional community by being world class and regionally-relevant cannot be overstated. As a clinical researcher and Dean of the university’s Graduate School of Medicine I know that health and biomedical research makes an important difference to our lives and gives us hope.

I joined IHMRI’s Executive Committee this year, seeing the role of Deputy Executive Director (Clinical) as a research-enabling one, providing encouragement and support for research and researchers at a grass-roots level and building research connections within the Illawarra, across Australia and internationally.

Innovation thrives in an environment where people are supported, risks are taken and mistakes are tolerated. Let us work together to create a healthier future for the Illawarra and beyond.
IHMRI clinician-led research grants

Title: Is there an association between health literacy and the quality of chronic disease management in primary care?
Investigators: Dr Judy Mullan, Professor Andrew Bonney, Dr Christopher Magee, Dr Kathryn Weston.

Title: The efficacy of betahistine in attenuating olanzapine-induced body weight gain in antipsychotic-naive patients: a placebo controlled pilot study.
Investigators: Professor Nagesh Pai, Associate Professor Chao Deng, Dr Sharat Lal, Dr Ram Malesu, Dr Judy Mullan, Professor Xu-Feng Huang.
Cardio-metabolic disturbances are common among people with serious mental illnesses and contribute to considerable disease burden. In many instances, this is because antipsychotic drugs such as olanzapine result in significant weight gain. This placebo-controlled study investigates whether an olanzapine-betahistine combination results in less weight gain, as suggested by preliminary data in animal studies.

Title: Engaging general practitioners to improve health service delivery to older patients: an action-based research project
Investigators: Dr Andrew Dalley, Associate Professor Karen Chariton, Clinical Professor Jan Potter, Dr Karen Walton, Associate Professor George Albert, Dr Adam Hodgkins, Professor Andrew Bonney
Malnutrition in older patients discharged to community settings is associated with adverse health outcomes, such as increased frequency and duration of hospitalisation, prolonged recovery from illness and even increasing mortality. This study aims to improve the way general practice identifies and manages malnutrition in older adults within the community.

Title: Lingo-1: an emergent actor in schizophrenia therapy?
Investigators: Dr Francesca Fernandez-Enright, Dr Kelly Newell, Professor Xu-Feng Huang, Professor Christos Pantelis.
Current antipsychotic drugs have side effects such as severe weight gain and diabetes, so the discovery of novel drugs to treat schizophrenia without these effects has the potential to improve the lives of schizophrenia patients. This study investigates the role of a brain protein (Lingo-1) in the therapy of schizophrenia and compares the efficiencies of a common medication to treat schizophrenia with an antagonist drug blocking Lingo-1 in a well-established animal model.

Title: A therapeutic strategy (P2X7R blockade) to prevent graft-versus-host disease (GVHD) in humans.
Investigators: Dr Debbie Watson, Dr Ronald Sluyter, Dr Jude Taylor, Associate Professor Stephen Alexander.
Bone marrow transplantation is currently used as a treatment for cancer and autoimmune disease. However, transplanted donor white blood cells can become activated and attack the recipient or host. Graft versus host disease (GVHD) is associated with tissue damage and the activation of the immune response in the host. This project examines the role of the human immune system in response to this tissue damage in a GVHD preclinical model.
Title: Active in our neighbourhood – a pilot study marketing intervention to promote and support new National Physical Activity Guidelines for Australian Children.

Investigators: Lyn Phillipson, Professor Sandra Jones, Professor Tony Okely, Ms Lisa Franco.

Current low levels of physical activity are associated with high rates of overweight and obesity in children. One reason the public engages in unhealthy behaviour is because they are unaware of, or disagree with, health guidelines. This project explores perceptions about new National Physical Activity Guidelines for Australian Children, delivering data to inform a pilot social marketing program to promote the guidelines in a targeted neighbourhood in the Illawarra.

Title: The PI3K/Akt/mTOR signalling pathway and the translationally controlled tumour protein TCTP in a model of obesity-associated colon cancer.

Investigators: Dr Bianca Suesse, Associate Professor Ulrich Bommer, Associate Professor Alistair Lochhead, Professor Xu-Feng Huang.

One possible mechanism by which obesity increases the risk of colon cancer is via the PI3K/Akt/mTOR pathway, known to be up-regulated by obesity-associated factors such as insulin, leptin and TNF \( \alpha \). This study uses a mouse model of obesity to assess the relative activity of the PI3K/Akt pathway and the associated anti-apoptotic protein TCTP and compares the parameters between lean and obese mice. It also investigates relative TCTP levels in human colon cancer samples using immunohistochemistry.

Title: Exome (genotype) sequencing in Crohn’s disease: deciphering host genotype/microbial relationships.

Investigators: Dr Caroline Kerr, Dr Bianca Suesse, Associate Professor Paul Pavli, Dr Thomas Lee.

The incidence of Crohn’s Disease (CD) – a chronic inflammatory bowel disease – is rising, costing Australia around $2.7 billion per year. Mucosal immunology and bacterial colonisation have been reported to play a role in the pathogenesis of CD. However, the dynamic relationships between these factors and the role they play in the disease are unknown. This study explores the relationships between a patient’s genotype and their gut microbes using DNA collected from a cohort and deep sequencing technologies to genotype it.
Scholarships and Donors

Dementia research scholarships

**Title:** Which factors delay driving retirement by individuals with dementia? A qualitative study of physician beliefs.  
**Student:** Jeremy Granger. **Degree:** MBBS (Year 3), BAppSci. **Supervisor:** Dr John Carmody ISLHD.

**Title:** Determining dose response variations in absorption of flavonoids from cherry juice using a novel gas chromatography-mass spectrometry technique in young, healthy adults and older adults with and without mild to moderate dementia.  
**Student:** Katherine Caldwell. **Degree:** MSc Research, BSc, (Population Health and Nutrition). **Supervisors:** Associate Professor Karen Charlton, Dr Andrew Jenner and Associate Professor Steven Roodenrys.

**Title:** Understanding the physical environment: the development of an audit tool-based educational package to inform an understanding of the use of the physical environment in the care of people with dementia.  
**Student:** Hannah Elizabeth Taylor. **Degree:** Bachelor of Psychology. **Supervisors:** Professor Richard Fleming, Associate Professor Victoria Traynor.

**Title:** Elucidating the roles of neuroserpin in Alzheimer’s disease.  
**Student:** Daniel Whiten. **Degree:** Bachelor of Biotechnology (Advanced) Hons. **Supervisors:** Professor Mark Wilson and Dr Justin Yerbury.

The IHMRI Summer Scholarships for Dementia Research further the careers of academically-talented students and raise the profile of dementia research in Australia. Local resident Richard Harris donates to the university on a regular basis with his support enabling IHMRI to offer four scholarships for dementia research in 2011-12. Mr Harris met the four successful students at special morning tea at IHMRI in May. He is pictured centre with (left to right): Jeremy Granger, Hannah Taylor, Katherine Caldwell and Daniel Whiten.

2011–2012 donations report

<table>
<thead>
<tr>
<th>DONATOR TYPE</th>
<th>NO OF GIFTS</th>
<th>TOTAL VALUE OF GIFTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alumni</td>
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<td>$39,676.01</td>
</tr>
<tr>
<td>Community Members</td>
<td>65</td>
<td>$20,461.80</td>
</tr>
<tr>
<td>Community Organisations</td>
<td>16</td>
<td>$89,420.00</td>
</tr>
<tr>
<td>Corporations</td>
<td>34</td>
<td>$134,567.45</td>
</tr>
<tr>
<td>Current Students</td>
<td>1</td>
<td>$1,633.11</td>
</tr>
<tr>
<td>Stakeholders</td>
<td>1</td>
<td>$3,000.00</td>
</tr>
</tbody>
</table>

**TOTAL** 854 $288,758.37

This summary includes donations made to the following funds:  
• Medical Research and Education Fund  
• Donations to the Graduate School of Medicine  
• Motor Neurone Disease research  
• Robert East Memorial Fund  
• Dr Phil Clingan – Centre for Medicinal Chemistry research  
• Professor Anatoly Rozenfeld research
### Australian competitive grant income

<table>
<thead>
<tr>
<th>TITLE</th>
<th>SCHEME</th>
<th>RESEARCHERS</th>
<th>TOTAL AMOUNT AWARDED</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AUSTRALIAN RESEARCH COUNCIL GRANTS (NON-EQUIPMENT)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small heat shock proteins: front-line defenders and therapeutic targets</td>
<td>Future Fellowships</td>
<td>Heath Ecroyd</td>
<td>$654,528</td>
</tr>
<tr>
<td>Lipidomics of vision</td>
<td>Future Fellowships</td>
<td>Todd Mitchell</td>
<td>$707,746</td>
</tr>
<tr>
<td>Cannabis and the brain: the good, the bad and the unknown</td>
<td>Future Fellowships</td>
<td>Nadia Solowij</td>
<td>$818,576</td>
</tr>
<tr>
<td>The nature of alcohol advertising in the ‘old’ and ‘new’ media and the impact on young people’s alcohol-related attitudes, intentions and behaviour</td>
<td>Discovery Projects</td>
<td>Sandra Jones, Peter Caputi</td>
<td>$165,000</td>
</tr>
<tr>
<td>Are proteostasis defects responsible for Amyotrophic Lateral Sclerosis?</td>
<td>Discovery Early Career Researcher Award</td>
<td>Justin Yerbury</td>
<td>$375,000</td>
</tr>
<tr>
<td>A community-based approach to the problem of underage drinking</td>
<td>Future Fellowships</td>
<td>Sandra Jones</td>
<td>$931,010</td>
</tr>
</tbody>
</table>

<p>| <strong>NATIONAL HEALTH AND MEDICAL RESEARCH COUNCIL GRANTS</strong>              |                                 |                                                              |                      |
| In vitro gut fermentation system                                     | Equipment Grant                  | Yinghua Yu, Andrew Jenner, Karyn Ridgway, Alexander Szabo, Jiezhong Chen, Caroline Kerr, Xu-Feng Huang | $6,083               |
| Targeting small heat shock proteins in diseases associated with alpha-synuclein aggregation | Project Grant                   | Heath Ecroyd (Chief Investigator), Andrew Aquilina (Associate Investigator) | $153,012             |
| Schizophrenia: reversal of antipsychotic drug-induced obesity and its related metabolic disorders | Project Grant                   | Xu-Feng Huang (Chief Investigator), Chao Deng (Chief Investigator), Francesca Fernandez (Chief Investigator) | $597,988             |
| Targeting nucleic acid synthesis and cell division in gram-negative bacterial pathogens | Project Grant                   | Nicholas Dixon (Chief Investigator), Aaron Oakley (Chief Investigator), Jennifer Beck (Associate Investigator), Michael Kelso (Associate Investigator) | $934,319             |</p>
<table>
<thead>
<tr>
<th>TITLE</th>
<th>AGENCY</th>
<th>SCHEME</th>
<th>RESEARCHERS</th>
<th>TOTAL AMOUNT AWARDED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advancing public health nutrition teaching and learning forum</td>
<td>Australian Learning &amp; Teaching Council</td>
<td>Conference Funding</td>
<td>Heather Yeatman (Chief Investigator)</td>
<td>$1,514</td>
</tr>
<tr>
<td>Microprobe XFM and XAS of gold anti-arthritic agents in macrophages</td>
<td>Australian Synchrotron Research Program</td>
<td>Travel Grant</td>
<td>Carolyn Dillon (Chief Investigator), Ronald Sluyter (Chief Investigator), Stephen Ralph (Chief Investigator), Judith Carrall (Chief Investigator), Lloyd James (Chief Investigator)</td>
<td>$1,415</td>
</tr>
<tr>
<td>How do distinct fatty acids affect central leptin sensitivity and glucose intolerance in obesity and Type II diabetes?</td>
<td>Diabetes Australia</td>
<td>Research Grant</td>
<td>Yinghua Yu (Chief Investigator), Xu-Feng Huang (Chief Investigator)</td>
<td>$59,943</td>
</tr>
<tr>
<td>VTE Prophylaxis following massive postpartum haemorrhage</td>
<td>COVI DIEN VTE</td>
<td>Management and Prevention Scholarship Program</td>
<td>Christos Georgiou (Chief Investigator)</td>
<td>$15,000</td>
</tr>
<tr>
<td>Accuracy of physical activity monitors in children</td>
<td>Heart Foundation</td>
<td>Grant-in-aid</td>
<td>Anthony Okely (Chief Investigator), Dylan Cliff (Chief Investigator), Rachel Jones (Chief Investigator), Marijka Batterham (Chief Investigator)</td>
<td>$130,000</td>
</tr>
<tr>
<td>Sedentary behaviour in children: measurement, patterns and determinants</td>
<td>Heart Foundation</td>
<td>Postdoctoral Research Fellowship</td>
<td>Dylan Cliff (Chief Investigator)</td>
<td>$155,016</td>
</tr>
<tr>
<td>Understanding and promoting physical activity and reducing sedentary behaviour in children and adolescents</td>
<td>Heart Foundation</td>
<td>Career Development Fellowship</td>
<td>Anthony Okely (Chief Investigator)</td>
<td>$462,568</td>
</tr>
<tr>
<td>Protein aggregation and chaperones: key players in Motor Neurone Disease</td>
<td>Motor Neurone Disease Research Institute</td>
<td>Grants-in-aid</td>
<td>Mark Wilson (Chief Investigator), Heath Ecroyd (Chief Investigator), Justin Yerbury (Investigator), Andrew Aquilina (Chief Investigator)</td>
<td>$100,000</td>
</tr>
<tr>
<td>Structural investigation of arsenic-peptide anti-cancer agents</td>
<td>Australian Synchrotron Research Program</td>
<td>ANBF Beamtime</td>
<td>Carolyn Dillon (Chief Investigator), Judith Carrall (Chief Investigator), Emma Hawksworth (Chief Investigator)</td>
<td>$4,875</td>
</tr>
<tr>
<td>Relationships between mucosal microbial taxa and the expression of inflammatory genes in Crohn’s disease: presentation at a keystone conference ‘The Microbiome’</td>
<td>Ian Potter Foundation</td>
<td>Travel Grant</td>
<td>Caroline Kerr (Chief Investigator)</td>
<td>$1,334</td>
</tr>
<tr>
<td>TITLE</td>
<td>AGENCY</td>
<td>SCHEME</td>
<td>RESEARCHERS</td>
<td>TOTAL AMOUNT AWARDED</td>
</tr>
<tr>
<td>-------</td>
<td>--------</td>
<td>--------</td>
<td>-------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Investigating the interaction between inflammation, obesity and colon cancer</td>
<td>Australian Institute of Nuclear Science and Engineering</td>
<td>Research Awards</td>
<td>Xu-Feng Huang (Chief Investigator)</td>
<td>$14,900</td>
</tr>
<tr>
<td>Optimisation of PAI-2 forms for non-invasive PET imaging of malignant tumours</td>
<td>Australian Institute of Nuclear Science and Engineering</td>
<td>Research Awards</td>
<td>Marie Ranson (Chief Investigator), Kara Perrow (Chief Investigator)</td>
<td>$21,162</td>
</tr>
<tr>
<td>Quantifying the impact of imaging choice for breast cancer radiotherapy</td>
<td>Cancer Australia</td>
<td>Priority-driven Collaborative Cancer Research Scheme</td>
<td>Peter Metcalfe (Chief Investigator)</td>
<td>$391,596</td>
</tr>
<tr>
<td>How is BDNF/TRKB signalling reduced in Alzheimer’s disease?</td>
<td>Alzheimer’s Australia Research</td>
<td>Dementia Grants Program</td>
<td>Jenny Wong (Chief Investigator)</td>
<td>$29,770</td>
</tr>
<tr>
<td>Microprobe XRF and XANES analysis of colon cancer cells for probing the anti-cancer activity of bismuth</td>
<td>Australian Synchrotron Research Program</td>
<td>Travel Grant</td>
<td>Carolyn Dillon (Chief Investigator), Emma Hawksworth (Chief Investigator), Judith Carrall (Chief Investigator)</td>
<td>$3,200</td>
</tr>
<tr>
<td>Microprobe XRF mapping for probing the action of potential arsenic anti-cancer drugs</td>
<td>Australian Synchrotron Research Program</td>
<td>Travel Grant</td>
<td>Judith Carrall (Chief Investigator), Emma Hawksworth (Chief Investigator), Carolyn Dillon (Chief Investigator)</td>
<td>$10,700</td>
</tr>
<tr>
<td>Reducing stigma and enabling help seeking for cancer in priority CALD communities in the Illawarra Shoalhaven Local Health District</td>
<td>Cancer Institute NSW</td>
<td>CSI Cross Divisional Grants Program</td>
<td>Sandra Jones (Chief Investigator), Lyn Philipson (Chief Investigator), Don Iverson (Chief Investigator), Keryn Johnson (Chief Investigator)</td>
<td>$90,089</td>
</tr>
<tr>
<td>Helicase loading and translocation in Bacillus</td>
<td>Australian Synchrotron Research Program</td>
<td>Travel Grant</td>
<td>Moeava Tehei (Chief Investigator), Flynn Hill (Chief Investigator)</td>
<td>$1,415</td>
</tr>
<tr>
<td>Genetic variants of damage-associated molecular pattern receptor P2X7 in dogs: potential role in inflammatory and bone disorders, and in pain</td>
<td>Australian Companion Animal Health Foundation</td>
<td>Grant</td>
<td>Ronald Sluyter (Chief Investigator), Mark Dowton (Chief Investigator)</td>
<td>$7,300</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>$6,845,059</strong></td>
</tr>
</tbody>
</table>
Health and medical research grants enable fundamental and clinical research across all themes.
Local and national media outlets continue to show a keen interest in IHMRI’s researchers, proactively contacting IHMRI’s Communications Coordinator on a regular basis to enquire about potential stories. During the year, new relationships were established with journalists at ABC TV (national), ABC Illawarra, WIN Television and the Illawarra Mercury.

Several journalists also identified stories through IHMRI’s quarterly newsletter which has grown in quality and quantity over the past 12 months. Content from the newsletter has also been regularly published in the ISLHD’s internal newsletter to enhance stakeholder communications.

Media highlights throughout the year included an ABC 7.30 Report on Dr Justin Yerbury’s work investigating the causes of Motor Neurone Disease.

IHMRI Executive Director, Professor Don Iverson, also penned a thought-provoking opinion piece for the Illawarra Mercury entitled: ‘Illawarra’s health stars align’ which highlighted how changes in the structure and organisation of health services, including the establishment of the Illawarra Shoalhaven Medicare Local, made the region’s health outlook stronger and provided more impetus for research.

The IHMRI website also continued to attract a steady traffic, with an average of 1,700 total visits per month between July 2011 and June 2012.

**Illawarra Mercury opinion articles**

<table>
<thead>
<tr>
<th>MONTH</th>
<th>TITLE</th>
<th>SUBJECT</th>
<th>AUTHOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>July 2011</td>
<td>Research opportunity knocks</td>
<td>Need to establish a broad academic culture within the ISLHD and leverage strengths at IHMRI and the UOW for population health studies and general health research.</td>
<td>Clinical Professor Denis King, Chair of the ISLHD board and IHMRI board member</td>
</tr>
<tr>
<td>July 2011</td>
<td>Network in best of health</td>
<td>Foundation and evolution of the IHMRI Research Network and its role in bringing academics and clinicians together.</td>
<td>Pat Frencham, Professional Officer, IHMRI</td>
</tr>
<tr>
<td>September 2011</td>
<td>GPs at frontline of research</td>
<td>How the establishment of the Illawarra and Southern Practice Research Network will bring a research focus to GP surgeries.</td>
<td>Professor Andrew Bonney, Graduate School of Medicine (UOW) and IHMRI Scientific Director – Primary Care and Rural Health</td>
</tr>
<tr>
<td>November 2011</td>
<td>Ocean’s influence runs deep</td>
<td>How the health benefits of seaweed, omega-3 oils and other seafood may soon be restricted by supply.</td>
<td>Dr Pia Winberg, Director of the Shoalhaven Marine and Freshwater Centre (UOW)</td>
</tr>
<tr>
<td>MONTH</td>
<td>TITLE</td>
<td>SUBJECT</td>
<td>AUTHOR</td>
</tr>
<tr>
<td>------------</td>
<td>-------------------------------</td>
<td>------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>December 2011</td>
<td>Studies benefit community</td>
<td>How cohort and population health studies benefit the community.</td>
<td>Associate Professor Vicki Flood, Nutritional Epidemiologist, UOW</td>
</tr>
<tr>
<td>January 2012</td>
<td>Illawarra’s health stars align</td>
<td>The consolidation and common geographical footprint of the ISLHD and new Illawarra Shoalhaven Medicare Local will significantly enhance the region’s ability to develop a health-based economy.</td>
<td>Professor Don Iverson, IHMRI Executive Director</td>
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<td>February 2012</td>
<td>Scientific research needs to get back to basics</td>
<td>Basic, or fundamental science, is not about fine-tuning existing treatments, but about discovering, for the very first time, the processes that cause disease.</td>
<td>Professor Mark Wilson, biomedical researcher and IHMRI Scientific Director - Healthy Ageing</td>
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<td>April 2012</td>
<td>Dementia and driving don’t mix</td>
<td>A trebling of dementia by 2050 will see more families struggle to support their loved ones in making the decision to stop driving. A new toolkit may help.</td>
<td>Dr John Carmody, Staff Specialist Neurologist at The Wollongong Hospital</td>
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<td>May 2012</td>
<td>Pressure to know your number</td>
<td>Getting your blood pressure taken or “knowing your number” is something you need to keep a close eye on at any age.</td>
<td>Professor Wilf Yeo, Director of IHMRI’s Clinical Research and Trials Unit</td>
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**Media Articles**

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<tr>
<th>MONTH</th>
<th>MEDIA OUTLET</th>
<th>TITLE</th>
<th>SUBJECT</th>
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<tr>
<td>March 2012</td>
<td><em>Illawarra Mercury</em></td>
<td>Scientists focus on halting brain drain</td>
<td>Professor Brett Garner, Associate Professor Aaron Oakley, Dr Heath Ecroyd and PhD student, Surabhi Bhatia, discover a new function for a protein with important implications for Alzheimer’s disease and ageing.</td>
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<td>March 2012</td>
<td><em>Illawarra Mercury</em></td>
<td>Pulling focus on disease</td>
<td>IHMRI’s new German-made confocal microscope will enable researchers to look beyond cells to individual molecules.</td>
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<td>April 2012</td>
<td>ABC <em>Illawarra</em></td>
<td>Driving and Dementia – enabling early retirement from driving</td>
<td>A Decision Aid booklet/toolkit is being developed to help families and those living with dementia decide when the time has come to stop driving.</td>
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<td>May 2012</td>
<td>ABC <em>TV 7.30 Report</em></td>
<td>Family tragedy inspired quest for answers</td>
<td>Having lost several members of his family to Motor Neurone Disease, Dr Justin Yerbury changed careers and is now a leading researcher in the field.</td>
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<td>June 2012</td>
<td>UOW media and <em>Illawarra Mercury</em></td>
<td>Acting out for youth mental health</td>
<td>Supported by IHMRI, Health Minds Theatre will explore mental health topics thorough an innovative theatre performance.</td>
</tr>
<tr>
<td>June 2012</td>
<td>WIN TV</td>
<td>Health study with cherries on top</td>
<td>Initial results from a study looking into the benefits of cherry juice in delaying cognitive decline.</td>
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</table>
The 2011-12 year allowed IHMRI to consolidate and develop its centrally-managed and shared research infrastructure to support and build research capacity across its broad network of researchers.

IHMRI continued to refine and improve its services to laboratory researchers and its information sharing and networking activities. It also explored and implemented new opportunities, especially in growing clinical and population health research capacity and projects.

IHMRI executive group

For most of the reporting period, IHMRI’s executive management team comprised four roles: IHMRI Executive Director, Deputy Executive Director and Chief Operating Officer together with an ISLHD Representative.

With continued development and expansion of IHMRI’s activities, the executive management team was expanded in early 2012 to include two deputy roles: Deputy Executive Director (Clinical) and Deputy Executive Director (Scientific).

Following a call for Expressions of Interest, two new deputies were appointed in May 2012:

- Deputy Executive Director (Clinical), Professor Alison Jones, Dean, Graduate School of Medicine, UOW
- Deputy Executive Director (Scientific), Professor Xu-Feng Huang, Director, Centre for Translational Neuroscience, UOW

Two new policy advisors were also appointed in the latter part of the year. The Director of the CRTU, Professor Wilf Yeo, was appointed Clinical Policy Advisor. IHMRI’s Scientific Policy Advisor is Professor Brett Garner.

Research program review

Since early 2009, IHMRI’s research program has been guided by six themes and three cross-cutting themes.

During 2011 this structure was reviewed by the Scientific Advisory Committee.

The IHMRI board later endorsed a recommendation to consolidate the theme structure into four themes, complemented by a population health flagship program.

Four new themes will come into effect in 2012-13:

- Ageing and Chronic Conditions
- Diagnostics and Therapeutics
- Health Care Delivery
- Neuroscience and Mental Health
In February, IHMRI announced that ‘Health Connect: A Chronic Disease Prevention Program for the Illawarra Shoalhaven Population’ had been endorsed for further development as IHMRI’s population health flagship project to provide the foundation for an expansive population health program for further development over time.

**Review of health and medical research in NSW**

IHMRI was again awarded research infrastructure funding under the NSW Government’s Medical Research Support Program for 2011-12 and funding agreements were negotiated and executed during the first quarter.

With the change in government and restructuring of NSW Health, the NSW Government commissioned a review of funding for health and medical research in NSW, led by Peter Wills.

IHMRI made multiple submissions to the review, providing input at every available opportunity. The emphasis of IHMRI’s submissions was on the unique positioning of regional institutes to take a whole-of-system and community-focussed approach to health and medical research.

Furthermore, submissions highlighted a niche opportunity for regionally-based institutes to implement community interventions and population health monitoring within a distinct regional population. This may not be as feasible in metropolitan areas.

**IHMRI headquarters and facilities**

Following the completion of IHMRI’s headquarters and state-of-the-art laboratories in 2010, attention turned to building for the future, investing and expanding research infrastructure to better support and service IHMRI researchers and in particular clinical researchers.

The new building is now functioning at high capacity, with all offices full, laboratories operating at peak performance and a growing volume of clinical research and trials activity in the Clinical Research and Trials Unit (CRTU).

The management of rodent facilities was integrated into IHMRI Operations during the year to take advantage of growing capability in the delivery of centrally-managed shared services. IHMRI therefore continued to expand and develop its operational procedures and staffing structures to incorporate support for animal husbandry and support rodent facility operations.

To assist in the smooth running of facilities, IHMRI developed two new custom databases. The first streamlines monitoring and reporting and operations in the rodent facility. The second streamlines clinical trial data and clinical data management, incorporating customisable Electronic Case Report Forms (eCRF) and electronic medical records.

An existing database to manage IHMRI’s laboratory facilities was also extended to include asset/lifecycle management.

Training and maintenance of common laboratory instrumentation was expanded, as were services around common laboratory processes. Efforts are now being concentrated on continuous improvement and quality assurance and ensuring labs maintain accreditations with external regulators.

In terms of achievements, IHMRI’s Technical Services Manager and Technical Officers received commendations from the Australian Quarantine and Inspection Service (AQIS) which audited the laboratories in May 2012 against the compliance standards required for maintaining Quarantine Approved Premises (QAP). The auditors noted that IHMRI set a benchmark for others to follow.
IHMR grants and support

The IHMRI grants program, previously offering two rounds, was expanded to include three rounds in 2011-12. Funds were made available from the UOW Health and Medical Research Fund, complemented with the proceeds of fundraising from the annual Stumping Serious Diseases celebrity Twenty20 cricket match.

The grants program was modified to encourage the submission of clinical and population health research projects with the potential to lead to competitive grant applications. The guidelines also encouraged teams, including academic and clinician researchers from IHMRI’s partner organisations, the ISLHD and UOW. Consequently, the relative proportion of funding provided to clinical and population health initiatives increased.

Thanks to a generous local donor, IHMRI was also able to offer Dementia Research Scholarships during the 2011-12 summer break (see page 29). The aim was to attract prospective higher degree research students with an interest in dementia and to provide them with research experience and an opportunity to evaluate and demonstrate their potential.

IHMRI continued its partnership with the UOW’s Graduate School of Medicine through the joint support of the Illawarra and Southern Practice Research Network (ISPRN) which now involves 33 General Practices in the region.

The network draws upon the experience and insight of GPs to develop projects that will improve patient care while supporting early and mid career GPs to undertake high-quality primary health care research.

IHMRI has again achieved significant growth and progress in 2011-12, as outlined in this report.

The IHMRI Operations team is very positive about advancing IHMRI from strength to strength and we look forward to reporting on further growth in next year’s annual report.

Chief Operating Officer
Sue Baker-Finch
IHMRI’s Board of Directors met five times during the 2011-12 financial year.

In December 2011, board member Professor Gerard Sutton AO, retired as UOW Vice-Chancellor and subsequently resigned from the IHMRI Board on 5 March, 2012. The seat was filled by Professor Paul Wellings, CBE, who took over as UOW Vice-Chancellor in January 2012.

On 13 March, IHMRI Chairman, Mr George Edgar, resigned to pursue other governance roles and the chair remained empty for the rest of the year.

**IHMRI Board of Directors**

The following were directors during whole or part of the financial year:

Chair, Mr George Edgar BSc (Tech, Met)
– Director, IMB Banking and Financial Service
– Director, Shin Investments, Pty Ltd
– Former Deputy-Chancellor and Council member, UOW

Professor Gerard Sutton AO, BE, MEngSc UNSW, PhD CUA
– Vice-Chancellor and Principal, UOW

Professor Paul Wellings, CBE, BSc (Hons – Zoology and Botany), PhD UEA, MSc (Ecology) Durham University, CMII, FRSA, FAICD
– Vice-Chancellor and Principal, UOW

Professor Judy Raper, BE Chem (Hons), PhD ChemEng UNSW
– Deputy Vice-Chancellor and Principal, UOW

Professor Denis King OAM, MB BS, FRACS
– Chair, Illawarra Shoalhaven Local Health District Board

Ms Susan Browbank, RN, CM, Dipl.N.E., BSc, MPH
– Chief Executive, Illawarra Shoalhaven Local Health District

Mr Henry Kornacki B Bus (Accountancy), CPA
– Director of Finance, Illawarra Shoalhaven Local Health District

**Scientific Advisory Committee**

Chair, Dame Bridge Ogilvie AC, DBE, ScD, FRS

Professor Christos Pantelis, MB BS, MD, MRCPsych (UK), FRANZCP
– Scientific Director of the Melbourne Neuropsychiatry Centre at the University of Melbourne and Melbourne Health

Professor Louise Ryan, BA, PhD
– Chief, Mathematics, Informatics and Statistics, CSIRO

Professor Judy Raper, BE Chem (Hons), PhD ChemEng UNSW
– Deputy Vice-Chancellor (Research), UOW

**SAC reviews**

The Scientific Advisory Committee (SAC) participated in two major reviews during the year:

• review of IHMRI’s research strategy
• identification and assessment of a bid for a population health flagship project

**IHMRI Executive Team**

Until May 2012, IHMRI’s executive management team comprised four positions:

– **Executive Director**, Professor Don Iverson, Pro Vice-Chancellor (Health), UOW

– **Deputy Executive Director**, Professor Wilf Yeo, Foundation Professor, Medicine and Clinical Pharmacology, Graduate School of Medicine (UOW), Director, Medicine and Emergency, ISLHD, and Director, Clinical Research and Trials Unit (IHMRI)

– **Illawarra Shoalhaven Local Health District Representative**, Ms Leanne Mills, Director, Nursing and Midwifery Services, Illawarra Shoalhaven Local Health District

– **Chief Operating Officer**, Ms Sue Baker-Finch

In May 2012, the role of Deputy Executive Director was replaced by two new deputies:

– **Deputy Executive Director (Clinical)**: Professor Alison Jones, Dean, Graduate School of Medicine, UOW

– **Deputy Executive Director (Scientific)**: Professor Xu-Feng Huang, Director, Centre for Translational Neuroscience, UOW

**Company Secretary**

The Company Secretary for IHMRI during the financial year was:

Ms Sue Baker-Finch, BSc (Hons), MBA AGSM, MBIC UOW, GAICD
The Illawarra Health and Medical Research Institute is a joint initiative of the University of Wollongong and the Illawarra Shoalhaven Local Health District.

IHMRI’s vision – *Excellence and innovation in health and medical research, better health services, healthier Illawarra community* – encapsulates the belief that, by linking academic, clinical and public health researchers around health and medical issues common in the region, research findings can be rapidly translated into improved clinical practice and health service delivery, leading to health benefits for the local community.

**Mission**

IHMRI’s mission is to build a centre of excellence and innovation in health and medical research, targeting health improvements through early intervention and preventative health care.

**Strategic goals**

IHMRI strives to deliver:

- Excellence and innovation in targeted health and medical research – *linking bright minds around common problems*.
- Collaborative research capacity building in our region – *bridging academic, clinical and public health research contexts*.
- Enhanced resourcing for health and medical research – *connecting researchers into quality facilities and services*.
- Improvements in clinical practice and the health of our community – *translating discoveries into better care and health improvements*.
- An informed and engaged community – *engaging the institute with the Illawarra community*.
- Organisational growth and development – *leading from the present to a better and more sustainable future*.

**Funding**

IHMRI acknowledges the support of the Office of Health and Medical Research (OHMR) in the NSW Ministry of Health for the provision of funding for research infrastructure to support IHMRI and the health and medical researchers connected to the IHMRI Research Network.

In the 2011-12 financial year, IHMRI was allocated $844,683 for research infrastructure by the OHMR under the NSW Government’s Medical Research Support Program (MRSP).

IHMRI’s founding partners, the University of Wollongong and Illawarra Shoalhaven Local Health District, also continue to provide vast in-kind support to IHMRI and conduct initiatives within their own systems and in conjunction with IHMRI, to further health and medical research and IHMRI’s goals.

In 2009, the university established a Medical Research Support Fund to support these initiatives.

The university’s largest subsidiary, ITC, has contributed $14 million to this fund since 2008 and continued to support health and medical research in 2011-12 by providing a $4 million dividend to the university as a contribution to the fund and health and medical research in the Illawarra and beyond.