Improving the identification and management of malnutrition in elderly patients

Alarmingly high rates of malnutrition in older patients admitted to both acute care and rehabilitation hospitals in the Illawarra was identified by University of Wollongong (UOW) and Illawarra Shoalhaven Local Health District (ISLHD) researchers in 2010. The study found that malnutrition was an important predictor of length of hospital stay.

In 2011, a follow up study, funded by an IHMRI Small Grant, found that patients discharged from hospital in a poor nutritional state experienced a downward spiral of ill health and had higher recurrent hospital admissions than their well-nourished peers. Worse, malnutrition predicted more than a threefold risk of mortality at 18 months of follow-up in the group.

Now the researchers and clinicians involved in the studies are seeking to make practical changes to improve the outcome for older patients.

The group, which includes Dr Andrew Dalley, Dr George Albert and Dr Adam Hodgkins (Illawarra Shoalhaven Medicare Local), Associate Professor Karen Charlton and Dr Karen Walton (UOW School of Health Sciences), Professor Andrew Bonney (Graduate School of Medicine), Clinical Professor Jan Potter and Marianna Milosavljevic (ISLHD), recently completed the first phase of action-based research investigating the best way to incorporate nutrition screening into a general practice setting.

Continued on page 2...
With the help of PhD candidate, Aliza Hamirudin, in-depth interviews were conducted with 27 staff at three general practices - Shellharbour Medical Centre, Culburra Beach General Practice and Junction Street Family Practice. While time was identified as a major barrier by both doctors and practice nurses, there was widespread support for the incorporation of nutrition screening instruments into the annual Medicare-funded 75+ health assessment.

“Our work to date has identified a major gap in the care of older people in the community,” says Associate Professor Charlton.

“This study is about finding a solution that will significantly improve health service delivery by focusing on the early identification and management of malnutrition.

“We need to test the screening process before we expand it to more general practices, which will ultimately improve clinical outcomes and quality of life for older, at risk patients.”

New cancer group brings like minds together

According to the Cancer Institute NSW, one in two Australian men and one in three women up to the age of 85 risk being diagnosed with cancer.

Eager to lower this staggering statistic, a group of IHMRI and UOW-based scientists have joined forces with clinicians in the Illawarra Shoalhaven Local Health District (ISLHD), Wollongong Hospital and several private cancer clinics to form a new Cancer Drug Discovery Group (CDDG) to develop novel anti-cancer drugs and formulations.

Founded by IHMRI-based Vice Chancellor Postdoctoral Fellow, Dr Kara Lea Perrow, the multi-disciplinary group will consider a range of options and 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 topics and activities, including the re-formulation of commonly-used chemotherapy drugs to reduce toxicity and improve patient outcomes. Other projects will look at the use of natural products and inhibitors to prevent and treat metastatic cancer, develop therapeutic vaccines and examine new strategies for the treatment of liver metastasis.

In partnership with the Australian Nuclear Science and Technology Organisation, some group members are currently developing non-invasive imaging techniques to monitor the progression of metastatic breast cancer. Other members will evaluate the uptake and metabolism of specific drugs using synchrotron radiation techniques and look at ways of improving cancer detection through the development of novel radiation diagnostics.

IHMRI’s research laboratories will be used to study the cell and molecular biology of cancer, look at immune responses and identify some of the pathways and mechanisms underlying the relationship between cancer and obesity, among other things.

“Cancer is an enormous global health problem, but with strong connections to the UOW’s Centre for Medical Bioscience and Centre for Medicinal Chemistry, Intelligent Polymer Research Institute, Illawarra Cancer Care Centre, St George Cancer Care Clinic and Illawarra Cancer Carers, we have the people and tools to start tackling it locally,” says Kara.

“We have an enormous amount of good will, intelligence and technical know-how behind this group, so we are aiming high and hoping to make real discoveries with real-world applications.”

Members of the group have already achieved several cancer breakthroughs, with Associate Professor Marie Ranson and Professor Phillip Clingan part of a team that was recently granted European patent rights for a novel formulation called Fluorodex which addresses adverse events associated with current treatment regimes for metastatic colorectal cancer.

“We are actively communicating with members of our local community as well as ISLHD clinicians. This drives our group mission which is to deliver, through innovative and collaborative strategies, new and improved anti-cancer therapeutics with fewer side effects,” says Kara.

The CDDG’s webpage can be found at www.uow.edu.au/science/researchgroups/cddg/index.html
Acting out - youth mental health

An innovative, interactive youth mental health conference will be held in the McKinnon Building at the University of Wollongong on 7-8 June.

Supported by IHMRI, Healthy Minds Theatre will explore mental health topics through a theatre piece entitled Understanding Depression: Fill in the Blank, written and directed by the co-founder of Sydney’s Milk Create Theatre Company, Matt Stewart, in collaboration with Mind Blank, a not-for-profit organisation that generates awareness of mental health through theatre and whose president, Ally Kelly, is a former UOW Creative Arts and Psychology graduate.

Based on the true story of Dan, a young person who suffered clinical depression, actors will tell Dan's life story on stage with the audience invited to suggest ways for him to overcome difficulties.

Targeting senior students, carers, school teachers, other community service providers and the general public, the format aims to increase young people’s understanding of mental illness, improve their ability to identify risk factors and reduce the stigma surrounding mental health problems.

Organised by the Wollongong Suicide Prevention Network in partnership with the ISLHD, including the Youth Mental Health Service, the conference also aims to boost the number of individuals seeking help regarding their emotional and social wellbeing and increase the identification, referral and treatment of at risk individuals by service systems and professionals.

A total of five theatre forums will be conducted, with a psychologist from Youth Mental Health available to assist young people and carers with their clinical enquiries. Local agencies have also been invited to showcase their services in information stalls outside the venue to further reduce the institutionalised perception of mental health services.

Funded by the Department of Health and Ageing (Mental Health Conference Funding Program), a similar conference was held at the Nowra Entertainment Centre on 28 October. It was attended by IHMRI Scientific Director (Neuroscience and Mental Health), Professor Brin Grenyer.

“I was extremely impressed with the way the performers engaged with school students around the difficult issues facing youth and the choices they have to make. There is a strong message about the value of connecting to mental health and counselling services both within and outside of schools and the importance of seeking help from teachers, family, friends, peers, local GPs and health services.”

It is expected that around 1,000 people will attend the Healthy Minds Theatre conference over the two days, making it the largest conference of its type ever in the Illawarra. The organisers hope that the blueprint can be shared with other regional, rural and remote areas via the Wollongong and Shoalhaven Suicide Prevention and Awareness Networks.

Contact: info@mindblank.org.au.

Second round of IHMRI Grants

In 2011, IHMRI announced funding for four small grants which were awarded to projects with a fundamental science focus. In April 2012, a second round was offered to fund pilot studies with an emphasis on clinical, translational or population health.

One of the successful projects is now investigating the association between health literacy and the quality of chronic disease management in primary care.

Arising from collaborations between chief investigators from the University of Wollongong’s Graduate School of Medicine and School of Psychology, the project team includes Dr Judy Mullan, Professor Andrew Bonney, Dr Kath Westo, Dr Chris Magee and Bridget Dijkmans-Hadley.
IHMRI project investigates the benefits of cherry juice on cognition

In the scientific community, there is intense interest in the potential of flavonoids, or phytochemical-rich fruit and vegetables, to improve health and especially to prevent age-related cognitive decline.

Internationally, large cohort studies suggest that these phytochemicals improve executive function and memory because they cross the blood–brain barrier to access areas of learning and memory.

Evidence is also emerging, mostly from animal studies, that anthocyanins – a class of flavonoid with bioactive components concentrated in dark red and blue fruits such as blueberries and cherries – can not only improve executive function and memory, but lower high blood pressure, a major risk factor for the development of dementia-related diseases.

In light of Australia’s ageing population, developing non-pharmacological approaches to complement current therapies for the prevention and management of dementia and other age-related diseases has major public health significance.

To date, much of the work has focused on blueberries, but attention is now turning to Australian cherries which are rich in anthocyanins. However, with a relatively short season and the inability for trial participants to consume large quantities of fruit, commercial cherry juice has been used in studies thus far.

Now, researchers at IHMRI and the UOW have worked in partnership with the NSW-based R&D company, Agritechnology, to extract cherry juice using a novel process that preserves the anthocyanin content close to that of fresh cherries, enabling the team to start testing the benefits on older people.

A recipient of an inaugural IHMRI Summer Scholarship for Dementia Research in 2011/12, UOW School of Health Sciences student Katherine

Continued on page 5...
Although there was no immediate effects on cognition, blood pressure dropped dramatically two hours after consuming 300ml of cherry juice and returned to normal four hours later. “These preliminary results are exciting and support the theory that the absorption of anthocyanins, or their metabolites, impacts on the activity of nitric oxide which, in turn, relaxes blood vessels and lowers blood pressure,” says Katherine.

“This food-based strategy may provide benefits through a number of mechanistic pathways.”

The same team, with the inclusion of ISLHD Clinical Professor Jan Potter, and Dr Karen Walton (Health Sciences), is now investigating the long-term effects of cherry juice consumption on the cognitive functioning of older adults with mild to moderate dementia, alongside changes in physical and functional ability.

Senior Research Fellow, Dr Jenner, is a leader in the field of flavonoid metabolism. He has also developed a technique to measure the levels of over 80 flavonoids to understand which chemicals are actually causing the beneficial effects.

While the evidence is not yet conclusive, it is fair to say that eating fruits – particularly red fruits – is very good for you.

Caldwell set out to assess if the consumption of a practical quantity of high-anthocyanin cherry juice had an acute impact on tasks related to cognitive functioning in people with and without dementia, compared to young healthy control subjects.

Under the supervision of Associate Professor Karen Charlton (Public Health), Associate Professor Steven Roederys (Psychology) and Dr Andrew Jenner (IHMRI), she tested two different doses - a 300ml single drink or the same amount split into three smaller quantities to be consumed over a six-hour period.

Dementia toolkit takes another important step forward

With the theme of “Dementia – managing not to forget”, the 2012 Annual Scientific Meeting for the Australian and New Zealand Society of Geriatric Medicine (ANZSGM) provided the ideal platform for the Reach Out in Dementia team to present the findings of a randomised controlled trial of a whole-of-service training initiative aimed at improving end of life care for dementia sufferers living in regional Residential Aged Care Facilities (RACF).

Funded by the Department of Health and Ageing, the trial was a collaboration between the ISLHD (Aged Care and Palliative Care) and IHMRI.

The initial phase sought to design, pilot and refine an education resource called the REACH Toolkit to improve recognition of the signs and symptoms indicating advanced stage dementia and to train carer staff about best practice care while empowering them to move toward that form of care.

Led by Clinical Professor, Dr Jan Potter, the trial was delivered on time and under budget and delivered encouraging and interesting clinical outcomes which Dr Potter, who was an invited plenary speaker at the ANZSGM in May, explained to delegates.

Conducted in 12 residential aged care facilities in the region, the trial recorded the incidence of presentations to Emergency Department (ED), hospital admissions, mortality and a variety of carer confidence measures and quality of life measures for patients and carers.

Continued on page 6...
New personality disorder guidelines available for comment

The Project Air Strategy for Personality Disorders is a joint initiative of IHMRI and NSW Health. Established in 2010, it aims to cultivate a more personality disorders-friendly health service which, in turn, will enhance treatment options for people with personality disorders (PD), their families and carers.

Affecting around 11 per cent of the adult population and an estimated 40 to 50 per cent of psychiatric patients, people with PD often have difficulty regulating their emotions. Some may report chaotic personal circumstances and have difficulty maintaining stable employment, accommodation or long-term relationships. Individuals may be ambivalent about seeking help and many PD sufferers do not respond well to traditional mental health interventions. Sadly, many cases go undiagnosed.

The Project Air Strategy team is working towards improving the capacity of mainstream mental health services to identify, manage and treat personality disorders by implementing a number of strategies for patients, carers and health professionals. These include the provision of clinical guidelines and interventions, training, supervision and secondary consultation, website resources and an extensive research program.

The team has met and exceeded many of the pilot program’s objectives, recently delivering new treatment guidelines which adopt a relational and collaborative approach to treatment across the entire health system.

Guidelines on diagnostic and risk assessments, developing care plans, providing brief, ongoing and pharmacological interventions, as well as clinical supervision and consultation...

IHMRI building to be renamed

Former UOW Vice Chancellor, Professor Gerard Sutton’s role in championing, developing and approving the establishment of IHMRI has been acknowledged by the University of Wollongong’s University Council with Vice Chancellor, Professor Paul Wellings, announcing that the IHMRI building, which opened in 2010, would be renamed the Gerard Sutton Building.

“IHMRI is the product of Professor Sutton’s vision to maximise and grow the funding available for health and medical research in the Illawarra; to build research capacity, especially among clinicians and within the area health service; and to make a substantial impact in improving the health status of Illawarra residents. It therefore seems appropriate that the IHMRI building be named after Professor Sutton,” said Professor Wellings.

A building dedication ceremony will be held soon.
are outlined. There are also guidelines for involving family members, partners and carers in treatment and working with young people, older persons, people in crisis, culturally and linguistically diverse populations and people with intellectual disabilities. There are also interventions for parents with PD and their children to reduce the potential for intergenerational transmission.

The guidelines also provide considerations for working with people with specific personality traits and disorders and managing co-morbid conditions.

The development team began researching and writing the document in October 2010. The draft guidelines are now available for public and professional comment on the website www.ihmri.uow.edu.au/projectairstrategy, with the final version due for publication around September/October 2012.

The project team includes Professor Brin Grenyer, Dr Mahnaz Fanaian, Bernadette Jenner, Heidi Jarman, Phoebe Carter and Rachel Bailey. They had the support of a large team of collaborative research assistants, clinicians in the health service, psychiatric consultants and experts in the field, both nationally and internationally.

In early May, delegates from India’s Council of Scientific and Industrial Research (CSIR) visited IHMRI as part of negotiations to advance research collaborations with the Australian Institute for Innovative Materials, while establishing a dedicated CSIR Research and Development Centre on the Innovation Campus and developing an academic exchange program for staff and students.

Established in 1942, the CSIR is India’s largest research and development organisation with nearly 40 laboratories and 50 field stations throughout India. Delegation leader, Professor Brahmachari, told the UOW’s media office that the partnership would contribute to CSIR’s long-standing vision of providing affordable health, low cost energy solutions and sustainable development for millions of people who need science and technology solutions.

As part of the visit, IHMRI/UOW scientists, Professor Nagesh Pai, Dr Todd Mitchell, Associate Professor Chao Deng and Postdoctoral Research Fellow, Dr Justin Yerbury, joined IHMRI Executive Director Professor Don Iverson, on a tour of IHMRI’s research laboratories and the Clinical Research and Trials Unit.

Indian delegation tours IHMRI as part of negotiations to establish centre

Schizophrenia is a devastating disease, ranking among the top 10 disabilities in developed countries. Around 2,000 new cases are reported in Australia annually. While antipsychotic drugs are available, they have limited efficacy and some serious side-effect, including obesity.

The Head of the Antipsychotic Research Laboratory at IHMRI, Associate Professor Chao Deng, is currently investigating neuropharmacological mechanisms underlying the pathophysiology of schizophrenia and antipsychotic medication with the intention of increasing its efficacy while reducing the side-effects.

His work has attracted international attention. Indeed, Associate Professor Deng has been invited to co-edit a Special Topic for the journal Frontiers in Cellular Neuroscience (Impact Factor: 3.588) under the title, “Mapping the pathophysiology of schizophrenia: interactions between multiple cellular pathways”.

Due for release in 2013, the edition aims to identify potential targets for the development of new generation antipsychotic drugs.

IHMRI researcher invited to edit publication

See www.frontiersin.org
Martina heads OS to learn more about bacterial infections

National Health and Medical Research Council Career Development Fellow, Dr Martina Sanderson-Smith, recently returned from her second stint at the prestigious University of Notre Dame (UND) in Indiana (US), where she is working with a group of like-minded specialists on ways to prevent and treat severe bacterial infection.

“I have an ongoing collaboration with researchers at the WM Keck Centre for Transgene Research, which is a joint venture between the University of Indiana Medical School and the University of Notre Dame,” explains Martina.

“I was first invited to the centre in 2010 by Professor FJ Castellino whose group has significant expertise in the study of the structure and function of proteins involved in blood coagulation and blood clot dissolution. He wanted Martina heads OS to learn more about bacterial infections to establish a research program focusing on group A streptococcus and, during my first visit, I helped establish a number of techniques and initiated several collaborations investigating the role of the fibrinolytic system in inflammation and bacterial infection.

“While there I also had the chance to work with some new models of infection and gained access to resources not available in Australia.”

The purpose of the second trip was to finalise some of that work and to help plan a conference to be held at UND in 2013, which Martina is on the international scientific advisory committee for.

“The research culture at the UND is very strong. Professor Castellino’s group does a lot of basic research with a biochemical focus, but they also have several ongoing collaborations with local hospitals and clinicians focused on developing patient-targeted therapies; the philosophy being that understanding the fundamental principles of how disease is caused is essential for treating it.”

Donor meets scholarship recipients

Local resident Richard Harris donates to the university on a regular basis, with his support enabling IHMRI to offer four Summer Scholarships for Dementia Research in 2011/12.

In May, Mr Harris was invited to IHMRI to meet the students who benefited from his generous donation.

Jeremy Granger used his scholarship to look at the issue of driving and dementia (see page 12), psychology student Hannah Taylor sought to develop an iPhone app for carers, Katherine Caldwell undertook a cherry juice study (see page 4) and Daniel Whiten looked at the role of Neuroserpin in Alzheimer’s disease.

The Director of Development and Engagement within the university’s Office of Community and Partnerships, Monique Harper-Richardson, says: “Richard is a significant donor to the university and his support has substantial impact. The IHMRI Summer Scholarships for Dementia Research funded research that will contribute to published papers, further the career of academically-talented students and raise the profile of research in dementia. Through Richard’s support and generosity, advances in dementia are being made that may benefit the future of many people.”
Study set to take ancient medicine into mainstream

For thousands of years, the Chinese have been treating serious diseases with medicinal herbs.

IHMRI’s Professor Xu-Feng Huang, Dr Yinghua Yu and Dr Zhixiang Wu share a strong interest in herbal pharmacology and the promise of extracting single molecules from herbs to treat type 2 diabetes and metabolic disorders, including obesity.

Having previously worked at the Affiliated Hospital of Liaoning University of Traditional Chinese Medicine in Shenyang - one of the earliest higher education institutions to specialise in traditional Chinese medicine - Doctors Yu and Wu were aware of the excellent research being conducted by hospital professors Shijia Yu and Tianshu Gao.

In March, they invited the professors to visit IHMRI to discuss a future collaboration. While here, Professor Yu delivered a talk on the work the pair perform at the hospital, which treats over 1,400 diabetic and obese in-patients a year and around 300,000 out-patients in an affiliated medical centre.

He discussed their clinical and animal research using herbal medicine to prevent and treat chronic complications of diabetes and obesity, with their work attracting several Chinese National Grants (the hospital has also been certified to conduct the clinical trial for new medicine by the Chinese authorities).

While here, the professors also met IHMRI Executive Director, Professor Don Iverson, to discuss the collaboration.

“We identified two main collaboration topics,” explains Professor Huang. “The first is the application of triterpenes for treating type 2 diabetes and the second is joint translational research focusing on identification of susceptible genes and biomarkers for metabolic syndrome and large vessel inflammation associated with type 2 diabetes.”

Professor Huang, Dr Yu and Dr Wu will visit China in May to develop the project further.

Labs pass inspection with flying colours

In May, two officers from the Australian Quarantine and Inspection Service (AQIS) audited IHMRI’s laboratories to ensure that they met the compliance standards required for maintaining Quarantine Approved Premises (QAP).

QAP’s are places where activities and/or research is conducted using imported products that pose a risk of introducing exotic diseases and pests to Australia. Requirements such as appropriate building structure, security, work practices and protocols need to be assessed before registration.

The audit process is performed twice a year for the first two years and then annually.

IHMRI’s Technical Services Manager, Linda Deitch, spent over an hour with the officers who assessed a wide range of processes, including relevant documentation, waste disposal procedures and whether suitable disinfectants were being used.

The IHMRI labs achieved ten-out-of-ten mark, with the auditors saying that IHMRI set a benchmark for others to follow.

Congratulations to Linda and her team of Technical Officers who do a great job in maintaining the labs to such a high standard.
Inaugural Proteostasis and Disease Research Symposium

Four IHMRI-based researchers, Dr Andrew Aquilina, Dr Heath Ecroyd, Dr Justin Yerbury and Professor Mark Wilson, are behind the inaugural Proteostasis and Disease Research Symposium to be held from November 28-30, 2012 at the Novotel, Wollongong.

With the support of IHMRI and the UOW’s Faculty of Science and Centre for Medical Bioscience, the group were awarded an Australian Academy of Sciences Boden conference grant to mount the event.

The symposium has already attracted some of the world’s leading experts in the study of proteostasis, which looks at the complex cellular network responsible for maintaining protein homeostasis and some of the biological dysfunctions underpinning the pathogenesis of diseases such as Alzheimer’s and Parkinson’s disease.

Speakers include Professor Chris Dobson FRS (University of Cambridge, UK), Professor Ron Kopito (Stanford University, CA, US), Professor Rick Morimoto (Northwestern University, IL, USA), Professor Paul Muchowski (University of California, US), Associate Professor Fabrizio Chiti (University of Florence, Italy), Professor David Lomas (University of Cambridge, UK) and Professor William Balch (The Scripps Research Institute, California, US).

The conference is chaired by Professor Mark Wilson who says there has been an enthusiastic response to the symposium and program, which includes poster presentations and sessions on protein biogenesis and trafficking, stress response, the role of chaperones, ubiquitin/proteasome, autophagy and proteostasis systems.

Given the number of international visitors, the program also includes social events, including a tour of IHMRI and the opportunity to experience the Illawarra Fly Treetop Walk.


Protein discovery grabs media attention

An IHMRI/UOW collaboration has 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.

Australian Research Council (ARC) Future Fellow, Dr Heath Ecroyd, IHMRI Principal Researcher and ARC Fellow, Professor Brett Garner, PhD student, Surabhi Bhatia and ARC Future Fellow, Associate Professor Aaron Oakley, were recently interviewed by the Illawarra Mercury about the discovery of a protein called Apolipoprotein D (apoD) which appears to detoxify free radicals which attack lipids in the brain and contribute to the death of neurons important for memory and cognition.

Continued on page 11...
“We know that a molecule called Amyloid Beta Peptide generates free radicals which attack lipids and other molecules,” explains Professor Garner.

“We have been able to identify exactly how apoD detoxifies these free radicals, so we’ve really found a novel pathway; an endogenous pathway for the brain to protect itself. This discovery has implications for the prevention and/or treatment of Alzheimer’s disease, the leading cause of dementia.”

With funding from the National Health and Medical Research Council, the team has not only combined their expertise in protein folding, lipid biochemistry and molecular modelling to make the discovery, they have utilised the skills and knowledge of other IHMRI Network Members with an interest in Alzheimer’s disease including Dr Jenny Wong, who is looking at how the beneficial effects of a gene important for normal brain development and higher brain functions is reduced in Alzheimer’s disease by increased expression of non-functional variants of that gene.

The team, which also includes UOW researchers Dr Bianca Suesse and Professor Paul Else recently had their work published in *PLoS One* and the *Biochemical Journal* and will now test the impact that changing apoD levels in neurons of genetically-modified mice has on neuron stress and Alzheimer’s disease-like characteristics.

IHMRI News is eager to publish more news and feature stories on projects undertaken by IHMRI Research Network members. Email: rgower@uow.edu.au

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**Liquid Chromatography-Mass Spectrometry (LC-MS)**

IHMRI Principal Research Fellow and Scientific Policy Research Advisor, Professor Brett Garner, recently received an anonymous donation of $427,690 to be used over the next three years (2012 - 2014) to purchase an ion trap mass spectrometer and employ a research assistant to support studies into the causes of age-related neurodegenerative diseases, including Alzheimer’s and Parkinson’s disease.

The new LCQ Fleet LC-MS System spectrometer, from Thermo Fisher Scientific, is currently being installed in IHMRI’s laboratories on level two and will provide rapid and reliable sample analysis.

With applications in clinical and forensic toxicology, natural product identification, impurity analysis, metabolite profiling and general analytical chemistry, the spectrometer’s atmospheric pressure ionization source supports ESI and APCI probes, with the optimal mass range of the spectra being 50 – 2000 Da.

“A major goal of our research is to understand the regulation of brain lipid metabolism and how this contributes to ageing and neurodegenerative diseases,” explains Professor Garner.

“A strong emphasis is placed on the identification of novel therapeutic targets that modulate lipid parameters and oxidative stress with the ultimate goal of developing treatments. The LC-MS system is integral to these studies.”

Adena Spiro was recently appointed as the program’s research assistant. While completing a Master of Philosophy degree (Neuropharmacology) at the University of Sydney, Adena gained significant experience in the analysis of brain metabolites using gas chromatograph/mass spectrometry and related techniques.

Adena is now assisting the group by maintaining the machine’s integrity, developing protocols and analysing samples from animal models as well as human brain tissue.

“I feel fortunate to have been given the opportunity to contribute to such an important project and I am certain that the installation of the new LC-MS will have a significant impact in finding answers concerning age-related neurodegenerative disorders,” says Adena.
Driving and dementia toolkit being trialled in the Illawarra

One of the most difficult conversations families have to have with loved ones experiencing dementia is about driving and when to get off the road because they pose a risk to themselves and others.

To take someone’s independence away is not a decision that anyone takes lightly especially when we rely so heavily on cars for basics like supermarket shopping, visiting family and friends and getting to appointments.

But it is a conversation that more people will soon be having. In April 2012, the World Health Organisation and Alzheimer’s Disease International released a report predicting a trebling of the prevalence of dementia from 35 million to more than 115 million by 2050.

Almost half a million NSW licence holders are over 70 and it is estimated that 20 per cent of individuals over the age of 80 have dementia.

Those suspecting their loved one’s driving abilities have been compromised by dementia usually seek out the advice of their GP or hospital-based physician. But, as researchers at the University of Wollongong found recently, there is inconsistency around the advice they are given because the physicians are not always sure what to do.

To better support individuals living with dementia, their families and healthcare practitioners, the researchers – who have skills in behavioural science, law, medicine, nursing, occupational health, psychology and road safety - collaborated with Alzheimer’s Australia NSW, Roads and Marine Services (formerly RTA), the Illawarra Shoalhaven Local Health District (ISLHD), Shellharbour City Council and the University of Tasmania on a project entitled, “Driving and Dementia - Enabling early retirement from driving”.

The program is being supervised by IHMRI Executive Director, Professor Don Iverson.

“We know that dementia can lead to impaired visuospatial skills, attention, judgement and memory – skills that are essential to driving safety,” says Professor Iverson.

“We also know that driving skills deteriorate with increasing dementia severity, so it is in everyone’s interests to tackle this issue.”

Phase one of the project involved interviews with drivers over 55 to better understand what they would find helpful when considering driving retirement. They said that while the views of trusted people were important, it was the actual experience of driving that was most convincing. They also agreed that discussions need to be held before one’s judgement is compromised and that knowledge of alternative forms of transport is important.

Thanks to a donation from Wollongong resident, Richard Miller (see page 8), IHMRI was able to offer four scholarships for dementia research during the 2011/12 summer break, enabling fourth year Graduate School of Medicine student, Jeremy Granger, to ask hospital-based physicians about the factors involved in delaying driving retirement.

They told him that personal independence, denial and the failure of health professionals to discuss the issue were major factors in delaying driving retirement and agreed that clear recommendations should be included in a patient’s notes when discharged from hospital. He also found that there was low awareness of Austroads national guidelines regarding dementia and that, apart from practical driving tests after the age of 85, there is no real test or historical feature that accurately quantifies driving risk.

All of the research findings were used by ISLHD doctor, John Carmody, to draft a Decision Aid booklet to help practitioners work through the issues early on, instead of waiting until crisis point.

That booklet is now being trialled by 50 drivers in the Illawarra with the aim of determining the acceptability and usefulness of such a booklet.

To further assess its impact, a randomised controlled trial will commence in November with the aim of recruiting 100 drivers.

By 2013, it is anticipated that the Decision Aid booklet will be made freely available to individuals and practitioners, both locally and nationally.

The researchers involved in the study are: Associate Professor Victoria Traynor, Clinical Professor Jan Potter, Cathie Andrew, Dr John Carmody, Jeremy Granger, Dr Kate Lewis and Robert Reynolds.
After almost 18 years with Lifeline - the 24-hour crisis support service founded in 1963 and which responds to over 14,000 callers from Helensburgh to the Victorian border every year - Grahame Gould says, “I’m only just getting warmed up”.

The clinical psychologist’s involvement in Lifeline began when he responded to an advertisement asking for volunteer phone counsellors while still at university.

“As soon as I started with Lifeline I found that I loved being there for people and, as I had a strong interest in management and psychology, my involvement soon turned into a job with the Sydney office and then with the South Coast office.”

While he still consults with clients, his day-to-day work takes him into all spheres of business and community life.

To illustrate the depth and breadth of his role, IHMRI asked him about a typical day.

“Well, today I forgot to drop off the ironing, so I got to work late. I then sat with a woman who is doing policy research about ways to fine tune the support we give to our telephone crisis supporters.

“I then went to the shops to buy a box of specialty tea for our volunteers, who I enjoy looking after.”

The rest of his day involved planning for a strategy meeting with Lifeline Australia “to ensure that the South Coast division links into the national agenda” before driving to IHMRI to meet with Executive Director, Professor Don Iverson and Chief Operating Officer, Sue Baker-Finch, to ask for support on a project utilising communication technology to improve the Lifeline service.

He also squeezed in a staff meeting to discuss a proposal to open a book shop in Wollongong Mall before driving to Sydney to meet with representatives from Uniting Care and then taking his kids to visit their grandmother.

Asked about some of the key issues concerning him, Grahame says, “There are a lot of changes in the health services and in health policy that will have quite big impact on us in terms of how we deliver our service. While we are a Non Government Organisation, we are always seeking ways to improve the service, so we need to keep abreast of national innovations.”

He is very interested in the opportunities that the National Broadband Network offers, as well as other digital technologies, including mobile phones and social media.

Asked about his involvement in IHMRI’s Research Network, he says, “I am always interested in research opportunities and I am currently seeking partners with experience in education and training to help us assess the benefits of a boot-camp-style training program that would condense our current 22 week program to 10 days of intensive training (Lifeline South Coast has over 280 volunteers on the books: around 110 of which man its phones while others work in its stores and on projects such as the Big Book Fair).

“I am also very keen to do another baseline study of our callers. The last one was around seven years ago, but we believe the nature of calls has changed and we want more information on how we can help them.”

Grahame recently attended an IHMRI Seminar with Dr Tony Okely on preventing child obesity, saying, “I’m very interested in areas where the physical and mental overlap.

“Another area of interest is the role that workplaces can play in improving wellbeing and we are talking to people in the Sydney Business School about that.”

Asked about the best aspects of his role and he says, “I enjoy the autonomy and creativity. I love getting people together to solve problems, which is why I enjoy my involvement in IHMRI’s Research Network. The collaborative model offers so much.”

If you have a colleague who may be interested in joining the IHMRI Research Network, please forward this newsletter on and invite them to learn more about the benefits of membership. Visit www.ihmri.uow.edu.au.
With a maturing institute and growth in the Clinical Research and Trials Unit, IHMRI’s Executive Director, Professor Don Iverson, recently sought to restructure and expand IHMRI’s executive team to include a Deputy Executive Director (Clinical) and Deputy Executive Director (Scientific).

Professor Alison Jones, Dean of the Graduate School of Medicine, was offered the role of Deputy Executive Director (Clinical) with an Expression of Interest sought for the scientific position.

After reviewing the submissions and interviewing candidates, IHMRI’s Professor Xu-Feng Huang was offered the honorary position and is now contributing to IHMRI’s strategic plan while fostering links with the community and identifying and recruiting researchers and clinicians.

Foundation Scientific Director of the Metabolic Conditions at IHMRI – where he is looking some of the ways and means to prevent and treat schizophrenia, obesity and related metabolic disorders - Professor Huang has a degree in Medicine, a PhD in Neuroscience and Doctorate of Science.

A farmer from the Jiangsu province of China, Professor Huang wanted to be a practicing physician, but chose to pursue a research and teaching career instead so that he could “develop better treatment for patients”.

After gaining practical experience at the Medical College in China, Professor Huang moved to Australia in 1988 to take up research positions in the University of New South Wales’ Schools of Medicine and Psychology and, later, the School of Health Sciences at the University of Wollongong.

He has gone on to produce over 160 publications, with his research articles and books being cited more than 2,500 times. He has also authored over 140 conference papers and attracted an impressive $4.5 million in grant funding since 2002.

While respected for his scientific skills, Professor Huang’s leadership skills have endeared him to many. Since 1996, he has mentored seven post-doctoral fellows, six research assistants and been the principal or co-supervisor of 14 successful PhD/Masters degree students.

He was awarded Highly Commended for the Vice Chancellor’s Excellence in Research Supervision Award in 2009, winning it in 2010.

Asked about his leadership style, he says, “The best way to support people is by giving them shoulders to stand on so that they have all the support they need.

“I believe that you need to give before you gain. You need to do something for them [group members and students] by stimulating them, encouraging them and recognising their successes. Every time someone in our group gets a paper published, we let everyone know and we congratulate them. It may be a small thing, but it creates a culture of success.”

As a supervisor, he regularly puts people into teams and poses a hypothesis to debate. “Often they will not agree with my ideas but I encourage this, as debate is critical to post science.”

As IHMRI’s Deputy Executive Director (Scientific), he is very clear about the steps required to for IHMRI to excel.

“First, you have to make the institute more competitive, nationally and internationally. You need to attract more National Health and Medical Research Council funding and promote high-quality publications.

“Secondly, we need to attract more government funding generally and collaborate with top scientists around the state.

“Then, we need to enhance our community-based research by collaborating with local clinicians and health care providers.”

He also believes that, by developing a population health flagship project, IHMRI will have the opportunity for enhanced collaborations with community organisations and sustained relevance to the region.

“These days, as a scientist, you really cannot close your door and hope for success. You have to collaborate, communicate your science and link into your communities. The best way to boost your reputation is to leverage the prestige of association.”

Away from work, Professor Huang enjoys vegetable gardening and cooking. “No one can get near my kitchen,” he says. His speciality? “Creative cooking.”
She says the experience of participating in the trial was, “Very positive because the doctors and nurses who provided the medication – which could have been real medicine or a placebo – were very friendly and made me feel as though they were concerned with my general health.”

Indeed, as many clinical trial participants learn, all trials begin with a full health check.

Asked if she felt that there were any risks involved, Michelle responds in her characteristically positive manner. “The risks are minimal but the potential benefits are enormous. Indeed, you could not only help yourself but potentially help hundreds of thousands of people, so it is a no brainer.”

Michelle is not only a trial participant, but an IHMRI Research Network member who is equally enthusiastic about the role that the institute can play in enriching the economic life of the Illawarra.

“IHMRIs Clinical Research and Trials Unit (CRTU) has undertaken several successful trials since it first began conducting them 15 months ago. The following provides an update on the status of those studies. The CRTU is seeking participants to register their interest in upcoming trials. To register, go to http://ihmri.uow.edu.au/participate.

Lipid Study – completed
This study is looking at a new combination of medication to treat hypercholesterolemia and mixed dyslipidemia (high blood cholesterol). The study does not propose to change the dose of current medications, but rather to reduce the number of tablets patients are taking to control cholesterol levels by altering the combination of medications.

Shingles Vaccine – participants are currently being monitored
Shingles is an illness that occurs when the varicella-zoster virus – which typically occurs in childhood and is commonly called chickenpox – reactivates and manifests as a localised rash usually accompanied by pain. The objective of this study is to compare a vaccinated cohort against a placebo group and to evaluate the protection provided by the vaccine.

Gout Study 1 – now closed
Gout – an extremely painful condition - is caused by the build up of uric acid in the blood. This study attempts to evaluate the safety and efficacy of the drug Allopurinol, combined with a daily dose of Colchicine in gout patients with hyperuricemia.

Gout Study 2 – recruiting now
The CRTU is currently recruiting for a trial testing the efficacy and safety of a new treatment for gout - Lesinurad. The trial will assess three treatment groups. In addition to Allopurinol one group receives a placebo, the second a 200mg dose of the study drug and the third group receives a 400mg dose of Lesinurad.

Cold Sore Study – closed but likely to recommence
Cold sores affect millions of people worldwide and are caused by the herpes simplex virus. The stages of the condition suggest that early immunogenic treatment may be a logical approach. This study evaluates the efficacy of Abalone Haemocyanin - derived from live abalone - in reducing the duration of cold sore episodes.

Profile: Trial participant, Michelle Blicavs
Michelle Blicavs is a well-known member of the Wollongong community who recently took time out of her busy schedule to participate in a clinical trial at IHMRI.

Currently business manager with the Wollongong office of the International Association of Public Participation, the lively 41-year-old is also a Wollongong Councillor whose work takes her into many spheres of community and business life. Indeed, there would rarely be a night where she does not attend a community function or business meeting.

Despite being very, very busy, Michelle saw many benefits in participating in a trial investigating a mouth wash to reduce the duration of cold sore episodes.

“When I saw an Illawarra Mercury advertisement for a cold sore study, I couldn’t get on the phone fast enough,” explains Michelle. “I am not embarrassed to say that cold sores are the bane of my existence and I would do anything to relieve the symptoms.”

She says the experience of participating in the trial was, “Very positive because the doctors and nurses who provided the medication – which could have been real medicine or a placebo – were very friendly and made me feel as though they were concerned with my general health.”

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“It is great to be involved in the Research Network and to support the work going on at IHMRI – which is well positioned to discover the next big medical breakthrough.”
Events

Dr Okely delivers his talk in the IC Lecture Theatre, Innovation Campus.

On Tuesday, 1 May, Dr Tony Okely, Associate Professor of Education and Director of the Interdisciplinary Educational Research Institute at the University of Wollongong, delivered a compelling seminar on ways to prevent child obesity.

Held on the Innovation Campus, the event attracted health professionals from the Illawarra Shoalhaven Local Health District including Karen Waller, manager of the Go4Fun program run by NSW Health through the ISLHD who, along with Dr Okely, was interviewed by UOW TV about ways to prevent child obesity.

UOW TV is a YouTube channel run by media students. Here they interview Karen Waller, manager of the ISLHD’s Go4Fun fitness program.

(L to r): Li Lin Cheah (Kinesiologist), Adrian Mozejko (teacher/theoretical physicist) and partner, Vinaya Patole.

(L to r): Carla Moreira and Rute Santos (University of Porto, Portugal), John Noble (University of Nebraska at Omaha, US, who is currently on sabbatical at UOW) and Matthew Watson, a UK resident studying under Dr Okely.

Physiotherapist, Maddie Beewers with exercise scientist, Mathew West.

In May, ABC TV journalist, Tracy Bowden, visited IHMRI to film an interview for the 7.30 Report with IHMRI Postdoctoral Research Fellow, Dr Justin Yerbury. The interview enabled the team to highlight the devastating impact that motor neuron disease (MND) can have on families. Several members of Justin’s family, including his mother and sister, died from the disease, and now the former Wollongong Hawks player has devoted his life to understanding MND, which has no cure or treatment. His is seen left with ABC cameraman, Tony Connolly.

Justin was also featured on a special edition of the ABC Radio National program, Life Matters, dedicated to Motor Neurone Awareness Week on 10 May.

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Lock it in!

Speakers for IHMRI’s Seminar Series and Networking Evenings for the rest of 2012 are now confirmed and it is a star studded line-up that has something for everyone. Invites for each event will be sent to network members, but as a heads up, pencil the following in your diary:

19 June IHMRI Networking Evening - Exclusive! Former CSIRO Deputy Chief Executive and distinguished academic, Professor Paul Wellings, took up the Vice-Chancellorship of the University of Wollongong in January, 2012. What’s his vision for the UOW and what contribution can health and medical research play in that vision? Find out by attending this exclusive event.

21 August IHMRI Seminar – the Scientific Director of the benchmark 45 and Up Study, Professor Emily Banks (Sax Institute) will talk about the evolution of the seven-year-old, long-term study of people aged over 45 involving more than 250,000 men and women.

19 September IHMRI Networking Evening - with Professor Niels Behrendt (PhD, DSc). Principal Scientist with the internationally-recognised Finsen Laboratory at the Copenhagen University Hospital, Denmark, Professor Behrendt will be in Wollongong as keynote presenter at the Plasminogen Activation System in Pathology Workshop. He will talk about his work developing receptors as tools for tissue-specific drug delivery and cancer imaging.

23 October IHMRI Seminar – with Professor Gordon Wallace, one of the world’s leading experts in the field of electromaterials and nanotechnology. Recipient of an Australian Research Council (ARC) Laureate Fellowship, Professor Wallace is Executive Research Director at the ARC Centre of Excellence for Electromaterials Science and Director of the Intelligent Polymer Research Institute at the University of Wollongong.

5 December Networking Evening - with Professor Peter R Schofield, PhD DSc, the Executive Director and CEO of Neuroscience Research Australia (NeuRA), a leader in brain and nervous system research whose goal is to prevent, treat and cure brain and nervous system diseases, disorders and injuries through medical research.