Can you spot the difference?

Emeritus Professor Kenneth Sutherland (right) stands by his photograph at the dedication of a lecture theatre in his honour at the Oral Health Centre of WA.

After he unveiled the photograph and plaque, Emeritus Professor Sutherland asked the audience with a chuckle, “Can you spot the difference?” He is with (from left) Faculty Dean Winthrop Professor Ian Puddey and UWA Senior Deputy Vice-Chancellor Winthrop Professor Bill Louden. See story page 4.

Screening program for silent disease a drawcard

Four in 10 of the Aboriginal people screened for kidney disease and diabetes in the Goldfields as part of a major health education campaign have been referred for further investigation.

Lead project researcher and paediatrician Associate Professor Christine Jeffries-Stokes said it was too early to tell how many of the referrals were serious cases.

“The other 60 per cent are well and many of them are children,” she said.

“The point is to educate them so they develop good habits and remain well.”

The educational component of the program has proved so successful that remote communities across Australia and overseas have asked to use the stories and films.

The $7 million Western Desert Kidney Health Project aims to reduce kidney disease and diabetes by 20 per cent over three years among 7500 people across six language groups in 10 Aboriginal communities.

Continued page 15
The genesis of type 1 diabetes is even more complex than previously thought, a major international study has found.

Research by the Type 1 Diabetes Genetics Consortium (T1DGC) has shown that more than 40 genes contribute to the risk of developing the auto-immune disease that affects more than 120,000 people in Australia. It was previously thought about a dozen genes were responsible.

One of the studies by the consortium involves genetic linkage analysis and is the world’s biggest family-based linkage study of any disease. The entire T1DGC study cost approximately $30 million.

Professor Grant Morahan, Director of the Centre for Diabetes Research at the WA Institute for Medical Research, said it was unlikely another linkage study of its size would ever be undertaken because of the huge expense and improvements in genetic technologies.

He was the lead author of an article reporting the final findings of the analysis, published in the journal Diabetes in March.

The four recruitment networks for the international study, which involved hundreds of centres, were the Asia-Pacific region, for which Professor Morahan was personally responsible, Europe, the UK, and North America.

The study involved 3,892 families with at least two children with type 1 diabetes. In all, 4,422 affected sibling-pairs were recruited over about five years. The aim was to identify genes for type 1 diabetes.

The family members provided DNA and blood samples, which were analysed for antibodies that signalled presence of the disease. Professor Morahan said genetic linkage meant that if siblings had the same disease, it was expected they would have the same disease gene.

So the DNA samples were tested for thousands of different genetic markers, in fact, 6,000 of them.

“What we looked for was whether the brother or sister had the same genetic marker carried over from the same parent and if they do, that indicates linkage,” Professor Morahan said.

“By chance, brothers and sisters will have 25% of their genes in common so what we are looking for is an increase above that 25%.”

Their study confirmed that the major effect on diabetes susceptibility was the human leukocyte antigen (HLA) complex.

“HLA genes are central in the immune response - they encode proteins that will present fragments of viruses or bacteria to the immune system,” Professor Morahan said.

“In people at risk for type 1 diabetes, HLA molecules can also present insulin to the immune system and that causes an auto-immune response against their own insulin molecules.

“The particular types of HLA molecules that people with type 1 diabetes have are, unfortunately, good at presenting these insulin fragments.”

The researchers also confirmed that the next most important influence on diabetes susceptibility was the insulin gene.

No other significant linkages were found, suggesting that in order to develop type 1 diabetes, an individual needs the HLA gene and probably a random mixture of a large number of other genes, each with a small effect.

“In other studies the consortium has done, using other methods, we have found there are over 40 genes involved in contributing to the risk of developing diabetes,” Professor Morahan said.

“It appears that in different people it can be different combinations of all those genes that lead to the autoimmune response.”

To muddy the waters further, about half the risk of type 1 diabetes is genetic and about half is environmental, and different environmental factors may interact with different T1D genes.

The findings disproved the study hypothesis that a small number of genes act together to cause susceptibility to diabetes and that they could be identified by the large study.

“But by doing all this work, we find it is even more complicated than we thought it would be at the start,” Professor Morahan said.

The researchers had hoped that by identifying the genes responsible, it would open the way to target them in order to prevent the disease.

“Since we haven’t been able to identify clear candidate genes that act in the majority of people to cause diabetes, then that approach may not work,” Professor Morahan said.

His team, including newly recruited statistical geneticists Dr Cao Nguyen and Dr Ramesh Ram, is now conducting more sophisticated analyses of the 40 genes. The Centre for Diabetes Research is supported in part by the Diabetes Research Foundation of WA.

- By Cathy Saunders
Guest Editorial

Three mirrors – a call for collaboration among local leaders for better health care

By Winthrop Professor John Newnham,
Faculty Deputy Dean,
Head, School of Women’s and Infants’ Health

In 1829, Dr William Milligan became the first officially recognized medical practitioner in Perth. His challenges were many. First, he needed to address the health needs of the increasing number of new Swan River colonists, including an outbreak of scurvy. Second he needed to build a hospital. Third, he needed more medical staff as he soon found himself overworked and in need of colleagues.

Nearly two centuries later, we are faced with new challenges, although the similarities are remarkable. Again, our population is expanding rapidly, with annual increases of more than 3% and in the next 20 years estimated to expand by 85%. We also need new hospitals and more hospital beds. Finally, we need more health care practitioners.

History has recorded that Dr Milligan laid the foundations for a highly functional and sustainable health care system. Our hope is that history will be equally generous in recording our current decisions and actions as providing the best opportunities for health in our community.

Faculty providing leadership

Recently, politicians and health care administrators have outlined the location, sizes and descriptions of a series of new hospitals and services in Perth. The UWA Faculty of Medicine, Dentistry and Health Sciences is now responsible for populating these facilities with clinical academic staff, ensuring high quality teaching, research and clinical services.

How well are we doing so far? Outstanding work has been done recently on expanding the number of medical student numbers, developing new educational strategies for an improved curriculum, creating opportunities in nursing and allied health care professions, and the research that underpins high quality health care.

But we may not be doing so well in aligning our academic needs with the assets of our current and future health care services. Our challenge today is to create the best structures in which our people can work best to provide an optimal mix of clinical care, teaching and research. Such a structure is vital if we are to ensure that each of our hospitals is appropriately staffed and the needs of our population are met, regardless of who they are and where they live.

Many initiatives are currently in progress. The Faculty is leading the development of a new curriculum for the 4-year (Doctor of Medicine) postgraduate course that will commence in 2014 and the design of a variety of research structures to populate new hospitals, including the Fiona Stanley Hospital in Murdoch. Consideration is being given to restructure the Faculty into Clinical Schools that may better align clinical academics with health care services and not just their disciplines. Strong support is being provided for the expansion of postgraduate training opportunities for the increasing number of medical graduates and the attraction of high quality staff to meet the needs of our growing health care services.

Communication is the challenge

To achieve these many goals we need to work together, with strong lines of communication. Perhaps this is one of our greatest challenges. The busy lives of health care workers, the disparate geographical sites at which we work, and the fragmentation of services as a result of our specialisation, are recipes for poor communication. We have systems in place to reward our people and teams for outstanding individual achievement, but much less attention is given to encourage different groups to work together. Indeed, at least in the world of research, many of the reward systems are directed to promote collaboration between ourselves and others who live anywhere but nearby. It is well known that citation rates are increased by the presence of international authors on our scientific publications, and attraction of funds from international funding bodies are highly prized. Our University lives by its logo of “Achieve international excellence”. And so it should. But perhaps working in constructive and productive harmony with our Perth-based colleagues should be equally valued.

So how can we achieve the best in our local endeavours? First, we need to appreciate how vitally important it is at this time of history to collaborate with each other to produce the best health care system that can be constructed within the limits of our resources. Second, we need to overcome our temptations to make decisions that place our workplace ambitions over the needs of our patients. And third, we need to come to the table with generosity and an understanding that we need systems that provide for all Western Australians, regardless of their place of residence, socio-economic assets and health needs.

These challenges require leadership at all levels. A 7th century Chinese emperor proposed that a leader needs to look into three mirrors – one to see himself, one to see the people around him, and one to see how his actions will be viewed by history. Dr Milligan in 1829 made decisions and provided leadership that history has viewed favourably. He rapidly developed a functioning health care system and effectively managed the epidemic of scurvy that afflicted the fledgling colony. His vision for a Colonial Hospital was quickly achieved and opened within a year at a site opposite our current Government House, and he successfully attracted more medical practitioners to the Colony.

We, together, need to continue this legacy. The rapidly expanding and increasingly prosperous state of Western Australia deserves an effective health care system underpinned by teaching and research of the highest quality. Those of us who have the privileges and responsibilities of clinical academia will play a vital role in fulfilling this vision.
Uncovering a welcome form of dental plaque

Smith said.

and then proceeding to rectify it,” Professor emphatic ‘Gee man, you’ve got a problem,’

students, always reassuring them with an honour of the late Mr Eric Williams, the dental profession in WA for a major part of the Earliest School.

Continued from page 1

Two stalwarts of the School of Dentistry have been honoured with the naming of facilities at the Oral Health Centre of WA, thanks to tireless lobbying by a well-known Perth dentist.

The dedication of a lecture theatre in honour of Emeritus Professor Kenneth Sutherland and a prosthetics laboratory in honour of the late Mr Eric Williams, along with unveiling of plaques, were a highlight of the annual prize-giving and scholarship ceremony for the School of Dentistry held in April.

Head of School and Director of OHCWA Winthrop Professor Andrew Smith told the guests that before OHCWA opened in 2002, the training of dentists was carried out at the Perth Dental Hospital and attached Dental School at a site in Murray Street from 1927-36, and then in Wellington Street from 1936-2001. At both sites, a lecture theatre was dedicated to Emeritus Professor Kenneth Sutherland, the longest serving Head and Dean of the Dental School.

“There is no doubt that Emeritus Professor Kenneth Sutherland was a towering personality of the dental profession in WA for a major part of the second half of last century,” Professor Smith said.

Also at the former Wellington Street site, a dental prosthetics laboratory was named in honour of the late Mr Eric Williams, the dental technician instructor.

“I understand... that Eric was an absolute rock for a couple of generations of hapless dentistry students, always reassuring them with an emphatic ‘Gee man, you’ve got a problem,’ and then proceeding to rectify it,” Professor Smith said.

When the University decided the honouring of the theatre and laboratory would not be transferable to the new OHCWA building, Perth dentist Dr Ray Owen launched a one-man battle against the decision, he said.

Vice-Chancellor Professor Alan Robson kindly agreed to Professor Smith’s request to reconsider the University’s decision.

“We are now able to re-dedicate these two teaching spaces,” Professor Smith said.

At the ceremony, prizes were awarded to the outstanding students of 2010 and, for the first time, School scholarships that have been generously established over the past few years were awarded on the same occasion.

Professor Smith said the ceremony had been sponsored for many years by the UWA Dental Alumni Society, which also supported various activities organised by the students, such as Sports Days, and donated funds for essential equipment, such as a new digital camera for clinical photography and a new digital video camera to produce teaching material.

An Excellence in Teaching Award was presented to Associate Professor Jennifer Bazen for high commendation in Small Group Teaching in a Clinical or Practicum Setting.

Faculty Dean Winthrop Professor Ian Puddiey said it was the goal of OHCSWA tutors to see UWA producing the finest dentists possible and he thanked them for creating a rich and rewarding learning environment.

Professor Puddiey said teaching staff were also involved in research and evidence-based dentistry and he hoped students would be excited by the possibility of becoming engaged in research.
Pieces will be added to the puzzle of the genetic origins of schizophrenia through a new collaboration between the Faculty and researchers in Mongolia.

The WA Family Study of Schizophrenia (WAFSS), one of the biggest genetic databases in the southern hemisphere, has formed a partnership with the National Center for Mental Health in Mongolia, which will add further to the database and help to develop mental health research and diagnosis in Mongolia.

WAFSS is an ongoing research program at the Faculty’s Centre for Clinical Research in Neuropsychiatry (CCRN), which is piecing together a picture of the genes involved in schizophrenia. It involves genetic analysis, using DNA donated by volunteers, and a sophisticated instrument for assessing psychosis - the Diagnostic Instrument for Psychosis (DIP).

CCRN Director Winthrop Professor Assen Jablensky said Mongolia had approached CCRN to strike up the partnership.

“They know about the WA Family Study of Schizophrenia and they are very interested in doing something similar,” he said.

The prevalence rate of schizophrenia is about 1 per cent throughout the world. Professor Jablensky said CCRN already had a successful research project in Indonesia and the chance to extend research into Mongolia was exciting.

“It is a huge territory if you look at the map and it is a population which is slightly larger than the population of WA,” he said. “As far as we know, there have been no previous studies of schizophrenia in Mongolia.”

More than half the population lives in the capital Ulaanbaatar and a third of the population is under 15. Although Mongolia is officially classed as a low-income country, Mongolians have high literacy rates and a relatively high life expectancy: 60.1 years for males and 65.9 years for females.

Rates of diagnosed mental illness are lower than in the West although the urbanised population has prevalence of mental disorder almost twice as high (24 per 1000) as in some rural regions.

The mental health system is still largely institutional, with most treatment taking place in hospitals rather than in the community, and about 80% of patients are chronically ill.

The National Center for Mental Health in Ulaanbaatar, which has 450 beds and about 75 doctors, is the nation’s only specialised mental health research and training facility. Its staff provide continuing education for Mongolia’s mental health professionals across all disciplines, develop national policy, undertake research projects and run the Center’s outpatient service.

Two psychiatrists from the Center, Dr Oyunchimeng Norovsambuu and Dr Guljanat Yerlan, who visited the Faculty in April received advanced training in the use of the DIP instrument from Professor Jablensky.

The second stage of the collaboration will involve collection of DNA samples in Mongolia, which will be sent for testing to WA. The project is being managed by CCRN’s Dr Greg Price, Senior Scientist – Electrophysiology, who will go to Mongolia next year to carry out electrophysiological testing on research participants. The information will be added to the data base. A one-year pilot project has been submitted to the National Center of Mental Health for ethics approval.

Dr Price said that by operating an international data collection system, highly transportable systems and practices would need to be developed. “But this is consistent with our current aims of taking the clinics to the clients,” he said.

“Applying electrophysiological services in a place like Mongolia is extremely comparable to large areas of WA. Similarly, actually contacting and delivering such services would be expected to have benefit in local areas of indigenous mental health.”
The pulse generator is implanted into the chest wall, with sub-cutaneous wires that travel up the neck and through drill holes in the skull deep into the brain.

Computer guidance is used to get the probes into position, with magnetic resonance imaging (MRI) scans enabling the brain structure to be visualised.

“In the past, it was found if you damaged certain areas of the brain in a controlled way, you could improve symptoms of Parkinson’s disease and other movement disorders but now we can achieve the same thing by flicking a switch on and off, without causing damage,” Professor Lind said.

“There is a small risk whenever you put an electrode into the brain, but it is a very low risk.”

Professor Lind and his research team have modified one of the brain targets previously used in the treatment of Parkinson’s disease and tremor, changing the positioning of the electrodes.

“We think that this target has lower risks of side effects (such as confusion or depression) and greater efficiency in improving movement,” Professor Lind said.

The new target appears to improve not only the rigidity, stiffness and tremor of Parkinson’s but also dopamine-induced dyskinesia, which is the involuntary, repetitive body movements that can be caused by the medical treatment for Parkinson’s.

Deep brain stimulation using a novel target to treat Parkinson’s disease and other movement disorders is being pioneered by a neurosurgeon in the School of Surgery with promising results.

Professor Christopher Lind said surgery pinpointing the new target was helping relieve the stiffness, tremors and involuntary movements suffered by patients, without apparent side effects.

Stereotactic surgery was a standard treatment in Australia for patients with advanced Parkinson’s disease, tremor, and dystonia or twisted body movements, he said.

Tremor was associated with a variety of disorders, including essential tremor and multiple sclerosis as well as Parkinson’s while dystonia included torticollis or wry neck, and generalised dystonia, in which all the limbs had an abnormal posture.

Professor Lind, a consultant neurosurgeon at Sir Charles Gairdner Hospital, said 20-50 stereotactic or deep brain stimulation operations were carried out in most of the nation’s capital cities each year.

Electrodes are inserted into the brain and reversible effects can be achieved by turning them onto different frequencies, either to activate or block neuronal activity.

Patients are fitted with a pulse generator, much the same way that a pacemaker is inserted, and it continually stimulates the requisite area of the brain. The patient is later given a remote controller.

A probe is inserted into the target in the brain and a guide tube lowered in. The brain is constantly irrigated to prevent it from shifting.
The team has performed about 15 operations over the past 18 months using the new target with very promising results but more cases will need to be studied to confirm the findings.

The rate of side effects such as confusion or depression with the standard target in the subthalamic nucleus is 10-20% while there have been no side effects seen to date using the new target in patients.

Professor Lind said his team used PET (positron emission tomography) scans on patients before surgery with different stimulation settings to determine which parts of the brain were activated or blocked with stimulation.

“So although this is a trial of deep brain stimulation to try to improve treatment for patients, it is also a powerful tool for probing how the brain works and there could be unexpected benefits that come out of that,” he said.

Deep brain stimulation is also used to treat intractable and severe pain that does not respond to any other treatment.

“It is usually pain due to nerve damage, which is one of the hardest forms of pain to treat,” Professor Lind said. It included damage to the nerves in the face or arms, caused by trauma, disease or other surgical procedures.

Deep brain stimulation therapy is effective in 50-66% of cases of severe pain.

The cost of the implantable device is $30,000 which is covered by Federal and state governments in most cases.

In a novel study, the team is measuring the neuropsychological outcomes of the treatment, covering a range of emotions and cognitive functions. The study is being conducted in conjunction with Winthrop Professor Sergio Starkstein, of the School of Psychiatry and Clinical Neurosciences.

In two other research innovations, Professor Lind’s group is collaborating with researchers from the School of Sport Science, Exercise and Health in the Faculty of Life and Physical Sciences to measure in detail the effects on the biomechanics of the patient, and to assess whether the targeted part of the brain has connections with other parts of the brain that influence heart rate and blood flow around the body.

Professor Christopher Lind with an earlier version of a head frame used in deep brain stimulation surgery until the 1980s.

- By Cathy Saunders

Professor Lind's team is one of only two in the world to use an innovative surgical technique in which deep brain stimulation is conducted under general anaesthesia rather than local anaesthesia.

The team uses a special guide tube technique in which plastic dummy electrodes are inserted into the brain and then an MRI confirms their exact position. The metal electrodes are then inserted.

“So we have greater certainty about what parts of the brain we are talking about than with other techniques,” Professor Lind said.

“The traditional way is to get a rough idea of where you want to go with your electrode, put it in there and then with the patient awake, examine the patient while you stimulate and then make adjustments, like pushing the electrode deeper, pulling it out a bit, pulling it left or right.”

The drawback is that an MRI cannot be conducted because the electrode is metal.

“So you can infer where you have put it but you don’t know for sure whereas we know for sure where our electrodes are,” Professor Lind said.

Professor Lind has described the innovative technique in two articles which are due to appear in the journal Neurosurgery this year.

The new technique is also performed at the Frenchay Hospital in England where the guide tube technique was invented.

Professor Lind’s team also uses a method of irrigating the brain during the operation to prevent fluid at the base of the brain being lost and air entering, which can result in the brain shifting.

“Mostly people have said you can’t prevent that brain shift but we have shown you can,” Professor Lind said.
The Faculty Executive has finally made its move into newly-furbished premises at the Clinical Training and Evaluation Centre (CTEC) on the main campus, driven there after the disastrous hailstorm that wreaked havoc on its former home in N-block last year.

The CTEC offices now house the Office of the Dean and the Office of Student Affairs.

N-Block, which is undergoing a complete make-over that is expected to be finished by the end of this month, will be occupied by the School of Primary, Aboriginal and Rural Health Care and the Faculty IT group.

The Faculty Education Centre has long been re-established in newly revamped quarters at 10 Stirling Highway.

Incoming Faculty Manager Dr Jan Dunphy said the Executive gratefully acknowledged the help from various quarters in accommodating for the past 15 months the occupants of N-block after it was destroyed.

CTEC housed the Faculty Executive; the discipline of General Practice headquarters on Stirling Highway in Claremont put up the School of Primary, Aboriginal and Rural Health Care and the Office of Student Affairs; the discipline of Emergency Medicine in R-Block and the School of Population Health accommodated the Faculty Education Centre; and the School of Psychiatry in D-Block made room for the Faculty IT Unit.

“The short term assistance certainly turned into a much longer haul and a lot of people had to squeeze into other rooms and share offices in order to accommodate all of us,” Dr Dunphy said.

Ground-breaking research projects such as the ear and hearing health metrics arm of the Busselton Healthy Ageing Study and the Tinnitus Epidemiology Study are among many activities underway in the new headquarters of the Ear Science Institute Australia (ESIA) in Subiaco.

After five years of planning and construction, the new centre was opened in February.

The building has been named The George Jones Family Centre in honour of prominent mining stalwart George Jones who donated $3 million towards the Institute.

In its new home opposite St John of God Hospital, the Institute is offering a wide range of services, including a cochlear implant centre, audiology clinic, balance centre, surgical skills training laboratory, medical practitioner clinics, the ESIA Hearing Discovery Centre and a private hospital.

Ear Telehealth and the noise-induced hearing loss educational program Cheers for Ears are co-ordinated from the building and research programs in audiology, otology and tissue engineering are among those undertaken by the Institute. One in six Australians have hearing loss.

ESIA Director Winthrop Professor Marcus Atlas, the Foundation Professor of Otolaryngology in the Faculty, said bringing scientists, researchers and clinical staff together under one roof had enabled a true collaboration which had proven itself in every sphere of their work, particularly in the delivery of successful outcomes for children and adults who suffered from ear and hearing disorders.

“The opportunity to take our University research and educational activities into the community and heart of one of the major medicine sites in Western Australia is good for everyone,” he said.

The new centre will also be the base for three months for Raine Visiting Professor De Wet Swanepoel, who is being hosted by the ESIA in association with the Ear Sciences Centre, UWA and the Raine Foundation.

Associate Professor Swanepoel, a research audiologist in the Department of Communication Pathology, University of Pretoria, South Africa, will be involved in collaborative research and presentations in areas including telehealth applications to provide hearing health care to remote or underserved areas, which is a topic of significant interest in WA.

His research areas also include infant hearing loss and early detection and intervention systems with a special interest in electro-acoustic and electro-physiologic measures of auditory functioning.

Professor Atlas, who also heads the Ear Sciences Centre (ESC) in the School of Surgery, said ESIA and the ECS were involved in education through undergraduate and post-graduate supervision and teaching in the Faculty, training of surgeons through an association with various hospitals and the College of Surgeons, and community and professional education through public meetings and involvement with support groups and industry.
We may take our ability to speak and swallow for granted, but many people have major difficulties. Now a voice and swallowing clinic set up by the School of Surgery to treat them is expanding.

Two months ago the clinic, based at Sir Charles Gairdner Hospital, was the first in Australia to acquire the new three chip high definition state-of-the-art digital stroboscope machine to assess swallowing and the vocal cords.

Run in conjunction with the hospital’s department of speech pathology, the clinic is held once a month. Professor Peter Friedland, of the School of Surgery and the Ear Science Institute Australia, said voice and swallowing disorders were much more common than most people realised, with thousands of people affected each year in WA.

“When you talk about voice disorders, most people think about an opera singer or artist or actor who has a problem with their voice,” he said. “We also look after other vocal athletes, people who use their voices on a daily basis - schoolteachers, policemen, advocates, attorneys, nurses.”

However, the majority of patients in the clinic are people who have voice and swallowing problems resulting from common conditions such as neurological and degenerative diseases, including strokes, multiple sclerosis, Parkinson’s disease, and natural ageing. Other patients are those with tumours in the brain, head or neck, those who have suffered brain trauma, and patients on antipsychotic and other medication.

The clinic received a major fillip in April with a grant towards the $165,000 video naso-pharyngo-laryngoscope machine which has a “chip in the tip”, that is, a camera in the tip of the endoscope that enables the user to see the vocal folds and pharynx. The SCGH Research Foundation donated $100,000 in funding.

The assessment usually takes only about 10 minutes using the new machine.

The clinic also treats people who have had laryngectomies, thyroid operations or radiotherapy to the neck.

“And we treat patients who have had operations or problems in their lungs,” Professor Friedland said. “One of the longest nerves in the body is the nerve that supplies the vocal cords, the recurrent laryngeal nerve, which goes down from the neck into the chest and back, and so any cardiac operation or lung problem like lung cancer or abscess can affect the vocal cords.”

The ability to swallow also was compromised in many common medical conditions, he said.

Moreover, the normal ageing process could lead to presbylaryngis, or vocal cord atrophy, which could cause swallowing problems.

Professor Friedland said the clinic could be held several times a week if funding were available for more speech pathologists.

His dream was to run it as a multi-disciplinary clinic with respiratory physicians and neurologists. His colleagues include senior respiratory physician Clinical Professor Martin Phillips, of the School of Surgery, and neurologists from the School of Medicine and Pharmacology.

Professor Friedland said that another advantage of the machine was that it offered an alternative to evaluation of swallowing with a modified barium swallow and subsequent radiation exposure.

- By Cathy Saunders
When Dr Janet Dunphy attended a retirement party for past Faculty Manager Sue Henshall in April, it seemed to her like a case of déjà vu.

The farewell party was held at the home of the Faculty Dean, Winthrop Professor Ian Puddey, who announced that Jan would be stepping into Ms Henshall’s role.

In almost the same spot in 2006, the Dean had told guests at a good-bye party for the Faculty’s Manager of Student Affairs, Felicity Gouldthorp, that Jan would be taking on that job.

“It was almost five years to the day when I was standing at Ian’s house again,” Jan said.

She applied for the position of Faculty Manager because she was seeking new challenges of higher level university management and hoping to take a leadership role in the changing face of the Faculty and UWA with the introduction of post-graduate professional degrees, she said.

“We will be looking at the challenges ahead, in particular for adequate funding for the education of the medical and dental and other health professional students and how we will manage clinical placements in the post-graduate courses,” she said.

Jan trained as a “rock doctor”, completing a PhD in geology at the University of Montreal, Canada, and post-doctoral research at McGill University before coming to UWA in 1996 as a post-doctoral Research Fellow working with academics in the now Centre for Exploration Targeting. She then moved into part-time research and part-time administration in the Centre, with the latter area to become her main focus as she later became Assistant Manager of student administration for UWA.

“I left behind academia entirely at that time, in 2003,” she said, adding that it coincided with the birth of her third child. “But I find that my academic background means that I have an enormous appreciation for the work, the research, the communication that is required with the academics, the necessity to publish, and the mechanisms of going through publishing and the grant approvals process.”

Jan said she was leaving behind a great team in the Student Affairs Office and would miss the daily student interaction.

Careers Cafe

Have you considered working in a rural and remote area of general practice, or even teaching medical students yourself? These and many other questions were just some that medical students in Perth pondered recently when gathered at an Early Career Pathways in General Practice event organised by Primary Health Care Research, Evaluation and Development (PHCRED) WA.

Medical students ranging from first to sixth years from both the University of Western Australia and the University of Notre Dame Australia came together to question and gather real life experiences from experts.

A number of topics were covered on the night including working in rural and remote areas, undertaking academic posts (teaching and learning), owning your own business and using evidence in practice.

The event was based on conversations, hearing real life stories of working in a rural area or how to undertake research as part of practice. This collaborative event aimed to inform attendees of a number of career choices and expose them to the possibilities.

Mrs Lyn Brun, the Statewide PHCRED coordinator, said having medical students discuss possible career pathways with experts currently working in a range of areas in general practice was well received, with many students stating they now had a better idea of what they could do in the future.

Students said it was really useful to discover other possibilities for general practice.

The evening event was arranged using a World Cafe idea - rounds of conversation at cafe-style tables.

“The idea is that we are often too busy with our lives, work and study and don’t have time to participate in reflective conversations which can explore questions and possibilities before we reach a key decision,” Mrs Brun said.

“This event was an opportunity for medical students to do just that, engage in asking the questions and have a conversation about what could be their future.”
To sleep, perchance to improve mental health

The importance of a good night’s sleep in promoting general well-being is well known. But what is less well researched is the relationship between quality of sleep and a person’s mental health outcomes.

Those who are already vulnerable to sleep disorders – such as elderly people developing dementia, or people living with serious mental illnesses – especially need to ensure good sleep. It becomes critical to maintaining quality of life, which is often already diminished by their mental illness.

A group of researchers at the Centre for Clinical Research in Neuropsychiatry and Clinical Applications Unit are currently exploring the impact of sleep quality and fatigue on people with serious mental illness. Associate Professor Flavie Waters carried out a pilot study in 2009 into the relationship between sleep disturbances and increasing severity of psychotic symptoms in people with schizophrenia. The study found that poor sleep on any one night was followed by increased delusional thoughts and more hallucinated voices. By contrast, better sleep was linked to lessening symptoms, which provides important implications for treatment options in schizophrenia.

There is often no ‘cure’ for people with severe mental illness, so in order to improve functional recovery, a radically different approach is needed. Sleep interventions are usually highly effective and can produce dramatic changes in health and functioning, so these treatments have the potential to improve quality of life and lessen some of the more distressing symptoms of mental illness. Research findings from these studies can be used to design interventions that modify the risk factors for poor sleep.

Sleep problems are also linked to the ageing process, and Associate Professor Waters is supervising several doctoral projects being carried out through the School of Psychiatry and Clinical Neurosciences. Among them is PhD student Alix Mellor, who is investigating sleep disorders among older adults to find out how sleep and depression can affect thinking skills.

Ms Mellor has recruited a group of ‘poor’ and ‘good’ sleepers, and people with and without depression to participate in a four-week sleep trial. As with Associate Professor Waters’ earlier sleep project, participants will wear an actiwatch – a small watch-like device that records a person’s motor activity and light exposure while they live their lives in natural conditions. Individuals will also take part in an overnight sleep study using a portable polysomnography device, and will keep a ‘sleep diary’, and the project will also take saliva samples to measure cortisol levels, indicating stress.

Another project by Psychiatry PhD candidate Michelle Hodge aims to understand and characterise sleep problems in older adults with behavioural and psychiatric symptoms of dementia. Sleep assessments typically require overnight sleep polysomnography at a sleep clinic. These are costly, of limited availability, and often not suited to vulnerable populations with special needs, so Associate Professor Waters and Ms Hodge are working to develop more flexible methods for assessing sleep in these individuals and to produce new tools for assessing the impact of poor sleep.

The Clinical Applications Unit, Graylands Hospital, has carried out a survey of Greylands Hospital inpatients to assess the prevalence of inter-related problems such as fatigue, poor sleep and chronic pain. The project, which is headed by Dr Deb Faulkner, found that 89% of almost 100 respondents had experienced fatigue in the previous week, and the majority also indicated that fatigue interferes with their daily functioning. Associate Professor Waters examined sleep problems in this group of inpatients. The results showed that the majority suffered from very poor sleep. Given the link between poor sleep and poor functioning, these findings suggest that those with poor sleep may be linked to a worse outcome.

Catherine Pardoe, a Physiotherapy honours student from the University of Notre Dame Australia collaborated with the Unit, Dr Faulkner and Associate Professor Waters on a project to examine levels of physical activity and how they relate to fatigue, pain, and sleep quality. Up to eight inpatients at Graylands Hospital wore actiwatches to monitor activity levels and sleep efficiency for a two-week period, and also answered questions about pain, fatigue, and sleep quality on a daily basis.

The information from this study will provide important information about the relationship between fatigue, pain, activity, and sleep, with the aim of informing treatment strategies for fatigue in this population.

Associate Professor Flavie Waters tests the portable polysomnography equipment on Centre for Clinical Research in Neuropsychiatry doctoral student Avdesh Avdesh.
A master class in cutting edge surgical techniques to preserve hearing has attracted participants from around the globe to Perth. More than 30 specialist ear surgeons and trainees from China, Thailand, Hong Kong, Africa and Australia attended the Second Master Course in Cochlear Hearing Implantation and Middle Cranial Fossa Surgery at CTEC in February.

Winthrop Professor Marcus Atlas and Professor Peter Friedland, both of the Ear Sciences Centre in the School of Surgery and the Ear Science Institute Australia (ESIA), convened the course in response to overwhelming feedback after the First Master Course held at CTEC in December 2009.

Professor Friedland, also of the Department of Otolaryngology, Head, Neck and Skull Base Surgery at Sir Charles Gairdner Hospital, said the master courses provided skills training for highly specialised and advanced surgical techniques and were supervised by a prestigious international and Australian academic faculty.

“Longstanding relationships between UWA, ESIA and these leading European and American academic faculties were strengthened and, importantly, new collaborations with Asian and African universities were forged,” Professor Friedland said.

The first master course trained and enabled participants to implant state of the art middle ear implants in fresh frozen cadaver specimens for the first time in the southern hemisphere.

The second two-day master course also taught innovative surgical techniques, including bone anchored hearing aid implants in cadaver heads and neurosurgical approaches for auditory tumours, encephalocele and balance disorders.

Radiologists, implant audiologists and vestibular (balance) experts also participated in the course.

Professor Atlas, who is director of ESIA, said there had been a paradigm shift in approaches to restoration of profound and partial deafness in the past few years.

The major emphasis now was on the simultaneous preservation of residual hearing and cochlear implantation.

“This is particularly relevant for implanted children who have decades ahead of new technology and discoveries,” Professor Marcus said.

New devices could stimulate residual low frequency hearing using acoustic stimulation and profound high frequency hearing loss using electric stimulation.

Cochleostomies, drug eluting electrodes and pharmacological protection for the cochlear during surgery were some of the exciting new developments.

Professor Friedland said the master courses relied on the generosity of several medical equipment and technology companies which transported several hundred thousand dollars’ worth of dedicated operating sets from overseas for each participant.

The questions for this issue are:

What is laughter? What is its purpose and how did it evolve?

Why do we cry? What is the connection between emotion and lacrimation?
Our medical quiz is kindly supplied by Emeritus Professor Bernard Catchpole, the second Professor of Surgery appointed to the Faculty.

WITS ABOUT YOU

Questions:

With what were the following people associated?

1. Which Greek god gave his name to a bone in our skeleton?
2. Which glands are referred to as “sweetbreads”?
3. What is our “yoke” bone?
4. Which bone is named after a plough?
5. What bone should be able to fly?

Answers page 15

Twenty-three doctors lined up last year for the six places in the Faculty’s Master of Surgery degree, which is attracting national attention.

Winthrop Professor of Surgical Education Jeff Hamdorf, who was recently appointed Head of the School of Surgery, said the degree, which was research-intensive with a unique component, had proved a success.

Professor Hamdorf, who is also Director of CTEC, said the Royal Australasian College of Surgeons wanted to draft a memorandum of understanding with the School so it could endorse the Master course for its trainee junior surgeons.

“We are promoting the degree as a way of identifying and promoting the academic surgeons of tomorrow,” Professor Hamdorf said.

Four more applicants were accepted this year.

The unique feature of the course, which is convened by CTEC, is that students gain practical experience by participating in advanced surgical skills workshops in CTEC’s specialised training laboratory environment, as well as undertaking academic studies.

The areas of interest of the current cohort of Master of Surgery students are far-reaching and include general surgery (breast conserving surgery - the impact of surgical technique, cosmetic outcome and patient satisfaction; laparoscopic procedures), orthopaedics (techniques for achieving component alignment in total knee arthroscopy; autologous chondrocyte implantation; treatment of the patella in total knee arthroplasty), and neurosurgery (techniques to understand brain function).

Professor Hamdorf said other initiatives to encourage research included an annual Research Day run by the School at which PhD candidates showcase their research projects. It attracts about 80 people each year.

The School and CTEC also support the UWA Student Surgical Society, which now numbers 300 and hosts regular talks and events.

Professor Barry Iacopetta, Graduate Research Coordinator in the School of Surgery, said it was important for young local surgeons to be encouraged to carry out research.

There had traditionally been some good incentives to promote research, he said. These included a requirement to carry out some prior research in order to gain entry to specialist training programs, or the need to hold a PhD to gain a hospital consultant position.

The RACS had also shown considerable foresight by establishing the “Surgeon Scientist” Fellowship program to support young surgeons during their postgraduate research studies.

However, more needed to be done, Professor Iacopetta said.

“It is important for the academic discipline of Surgery that we continue to have young surgeons who undertake formal research training,” he said. “This not only ensures the supply of academic surgeons but also means that our School can continue to carry out clinically relevant, translational research.”

The School encompasses a wide range of surgical disciplines, with active research being carried out in areas including neurosurgery, orthopaedics, wound repair, cancer and vascular surgery.
In the long term, it might be possible to develop drugs.

If we understand how a specific group of protein receptors work together, the more we should be
understand how a specific group of protein receptors work together, the more we should be
understanding the role these proteins play in our body.

Medical Research (WAIMR) is QAS the more we
understanding the role these proteins play in our body.

His previous research has already shown that some of the individual polyphenolic compounds in tea improve blood vessel function significantly. The study into coffee hopes to find a similar vasodilatation effect.

Professor Croft said although some forms of coffee could lead to increased blood pressure and cholesterol levels, the study would look at a particular type of coffee where this did not occur. Polyphenolic compounds in other foods such as tea and wine were already known to act as antioxidants.

“"There was, and maybe still is, a popular view that a lot of chronic diseases involve oxidation or oxidative stress,” Professor Croft said.

His previous research has already shown that some of the individual polyphenolic compounds in tea improve blood vessel function significantly. The study into coffee hopes to find a similar vasodilatation effect.

Associate Professor Kevin Pfleger, Head of Molecular Endocrinology at the WA Institute for Medical Research (WAIMR) is QAS the more we understand how a specific group of protein receptors work together, the more we should be aiming to learn about why side-effects happen with drugs.

In the long term, it might be possible to develop drugs with reduced or zero side-effects, he said.
Screening program for silent disease a drawcard

Continued from page 1
Since the community-driven project’s launch in October, 320 people across four communities have been screened, including in Norseman, Karrawang, Coolgardie and Menzies.

Associate Professor Jeffries-Stokes said the baseline screenings had “confirmed suspicions that the communities had higher rates of nutrition-related diseases and the early signs of kidney disease.”

“We are finding up to a third of people already have proteinuria,” Associate Professor Jeffries-Stokes, who is based in Kalgoorlie with the Rural Clinical School of WA, said.

“We are seeing high rates of anaemia and high numbers of overweight and obese people.”

Kidney damage was reversible in the early stages, she said. “A lot of these factors can be changed if you have a healthy diet, exercise a bit more and reduce your stress.”

Residents of Menzies, which is 132km north of Kalgoorlie, had responded particularly well to the project, with more than 75 per cent of the population volunteering to be screened.

“There has been great enthusiasm for the project,” Associate Professor Jeffries-Stokes said. “Even if they feel well and think they’re healthy, people should come and be screened because these are diseases which are asymptomatic.”

The project team will go to each of the 10 towns once a year for three years.

“In the first year we go in and do the screenings, teach risk factors and present a community education program,” she said. “The community uses that information to produce their own health promotion materials.”

Communities have worked with the project team using animated sand drawings, plays and songs to create educational videos on kidney disease and loaded them onto youtube.com.

Associate Professor Jeffries-Stokes stressed how integral the arts method was to the project.

“You are taking a traditional way of teaching and adapting it to a modern environment,” she said. “When it is loaded on to youtube it is spread wider in the community. Other remote communities have asked permission to use the stories and films in Australia and across the world.”

The project team includes two Aboriginal health and community development workers, four students on rotation from the Rural Clinical School and, depending on the town’s size, one or two artists-in-residence.

One of the biggest obstacles the team had faced was the limited availability and high cost of fresh fruit and vegetables in many of the communities, Associate Professor Jeffries-Stokes said.

A community health officer had been hired as part of the initiative to talk to communities about methods to improve their supply of fresh fruit and vegetables, for example by planting fruit trees in public gardens and public places.

The project is delivered by the Rural Clinical School, Bega Garnbirrangu Health Services, the Goldfields Esperance GP Network and Wongutha Birni Aboriginal Corporation.

- By Amanda Saunders

Answers to the quiz on page 13
2. The thymus and pancreas.
3. The zygoma - the malar or cheek bone.
4. The vomer - part of the nasal septum.
5. The sphenoid - it has four wings!
Pro-active fourth year Health Science students will push for on-campus innovations for all UWA students that may help their health, including end of journey facilities for cyclists.

At their annual Health Day, held this year on 10 May, 34 students undertaking the Health Promotion Unit set up four stalls on the main campus which focused on physical activity, mental health, road safety and tobacco control.

They gathered hundreds of signatures for two petitions, which they will present to University management and the Student Guild.

One petition calls for a bike hire system, secure bike bays, shower and change rooms and other facilities for pedal-pushers.

The other asks for a Centrelink office to be established on campus as a means of helping students’ mental health.

Professor Fiona Bull, Health Promotion Unit Co-ordinator, said one of the aims of the day was to encourage physical activity, particularly cycling to and from university and around the campuses. A “bike doctor” was on hand at the stall to repair bikes for free and bike bells and maps of cycle routes were given out.

“But if you don’t have adequate end of use facilities, then all the promotion of cycling in the world won’t really make much difference,” Professor Bull said.

The second petition aims to fill a gap in Centrelink offices because those nearest to the University are in Fremantle or Innaloo.

The provision of an office on campus to help students gain financial advice and help is seen as a way to help relieve the stress of money woes. A survey by the Health Promotion cohort has found that finance is the greatest cause of stress for students.

The petition was promoted at the mental health stall, which also provided information on other stress-busters such as time management to balance work and study, good quality sleep, and meditation.

At the stall with the tobacco theme, students were encouraged to quit smoking, in line with the University’s decision to be a smoke-free campus from the beginning of next year.

“Helping students quit and helping students to help their friends quit is complementary to the University-wide initiative,” Professor Bull said.

Road safety was chosen as one of the four priority areas and the students targeted drink-driving because of the heavy injury and death toll associated with it.

Health Science Society President Rachel Jones said the students had focused on topical themes, promoting change that was sustainable.

They had also attracted a lot of support from outside groups.