The whole human genome just an afternoon’s work

A cutting-edge machine that will ultimately enable researchers to analyse the entire human genome in an afternoon for just $1000 has been made possible by a generous donation from a WA philanthropist.

Perth businessman Mr Charles Morgan, former chair of WA’s Technology and Industry Advisory Council, donated $250,000 for an Ion Proton Sequencer for the LotteryWest Biomedical Facility - Genomics, within the School of Pathology and Laboratory Medicine. It is the first to be installed in Australia.

Mr Morgan, who has donated more than $1.6 million in all to the facility for equipment, is among numerous kind donors to the Faculty (see stories pages 6, 7, 8).

Associate Professor Richard Allcock, Scientist-in-Charge of the facility, said at present it could take three weeks to six months and cost $10,000 to $15,000 to sequence the human genome.

“The new sequencer allows us to do things at different scales,” he said. “This is basically the latest and greatest. It allows us to do more, much faster, much cheaper, and we have got far more control over it.

“With our smaller machines, we might take a region of the genome that is 50,000 or 100,000 base pairs in length and examine that looking for mutations.

“With the new sequencer, at the moment we can look at about 10 billion base pairs and next year when it expands we will be able to look at 100 billion base pairs at a time.”

Mr Morgan has previously donated funds for the previous generation high-capacity genome sequencer (SOLID) and the Ion Torrent personal genome machine, which is the smaller brother of the Ion Proton. This means the facility has been able to keep pace with the rest of the world.

The facility is open access and researchers from all fields of study in which DNA is analysed can use it on a collaborative basis.

“We are almost unique in that we were set up to provide sequencing services to as many people in the State who want them, regardless of what they are doing,” Associate Professor Allcock said.

Many Faculty researchers have made use of the facility. “They are performing research projects where they have a suspicion there may be a genetic component to the disease,” Associate Professor Allcock said. The facility can assist in the modelling of the study, perform the sequencing, generate the data and help with the analysis.

continued on page 5
A special privilege

Be yourself, be good to people, and be humble - these were the words of advice from a leading Faculty Professor to 182 new medical graduates as they went out into the world to practise the art and science of medicine.

Winthrop Professor Helen Milroy, Director of the Centre for Aboriginal Medical and Dental Health (CAMDH), delivered the Occasional Address at the Faculty Dedication Ceremony for final year medical students in Winthrop Hall last month.

Professor Milroy, who was the first indigenous medical graduate and also the first indigenous psychiatrist in Australia, reflected on what she loved about being a doctor.

“Firstly, it is an absolute privilege to be able to share in the lives of people and in children in particular, regardless of who they are,” she said.

“The stories you will hear are far more interesting than any movie you will ever see.” However, she quoted from one movie, saying “With great power comes great responsibility. Use it for good.”

Secondly, while there were a lot of people in pain and suffering, sharing in the joy of recovery was fantastic.

Finally, the art and science of medicine was endlessly fascinating, she said.

In his welcome address, Dean Winthrop Professor Ian Puddey said it was a special privilege for him to stand at the lectern that day, first and foremost to honour the students who would comprise the graduating medical year of 2013 but also for another reason.

This later became clear when the name of one of the new graduates was read out. It was Dr Rachel Halls, who is his daughter, and she had just graduated in medicine and surgery with honours.

Professor Puddey said the cohort was the 53rd graduating medical class and the first graduation ceremony next year would occur in the 100th year since the Medical School had continued to focus on diversity and one-quarter of the inaugural academic staff of The University of WA took up their posts and the first students now came from rural and remote WA where about one-quarter of the population lived.

“The thirty of the graduates before you today have a rural background,” he said. “And this list has grown, with 42 rural students anticipated to complete medicine next year.”

Professor Puddey said the Medical School also had a proud history of recruiting and mentoring Aboriginal students.

“We are consistently among the top three in Australia in terms of involvement and graduation of indigenous students around the nation,” he said. One indigenous student was part of the year’s graduating class.

AMA (WA) President Dr Richard Chong, who presented the AMA Gold Medal, said the new graduates were on the cutting edge of medicine.

“Tomorrow you will treat patients and make decisions that could change their lives and potentially change their destinies,” he said.

But the new doctors had been trained in the art of clinical diagnosis, risk evaluation and assessment, and the management of the whole person.

“No other profession has been trained this way and this is the difference between medicine and all other professions,” he said.

The prize winners

AMA Gold Medal
Marcus Jin Hui Sim

Alan Charters Elective Prize - to the student who gives the best presentation on their elective attachment.
Catherine McHugh

Alfred Nailor Jacobs Memorial Prize - to the student who has shown outstanding ability and promise in Rural General Practice.
Matthew Lewis

Australasian Faculty of Public Health Medicine (WA branch) Prize - to the student who has shown the most outstanding performance in Public Health.
Caitlyn White

Australian and New Zealand College of Anaesthetists/Australian Society of Anaesthetists Gilbert Troup Prize - to the student who obtains the highest mark for Anaesthesia.
Wai Teo

Arch Ellis Memorial Prize in Psychiatry - to the student who obtains the highest mark in level 6 Psychiatry.
Andrew Duthrie

C B Kidd Memorial Prize in Psychiatry - to the student who obtains the highest aggregate mark in Psychiatry in the course.
Nicole Villanueva

Fred Johnston Memorial Prize - to the student who has achieved the highest aggregate result in all sixth year units.
Marcus Jin Hui Sim

Hamish Macmillan Prize in Dermatology - to the student who is the most outstanding in Dermatology.
Radhika Ellies

Helen Jane Lamard Prize in Medicine - to the student who is the most outstanding in Medicine in the sixth year.
Samuel Winfield

Helen Jane Lamard Prize in Surgery - to the student who is the most outstanding in Surgery in the sixth year.
Nathalie Brockman

Hing-Hang Leung Prize in Palliative Care - to the student with the highest mark in the Palliative Care essay.
Sai Rupa Baskar

Peter Anderton Memorial Prize in General Practice - to the student with the highest average mark in the clinical components of Foundations of Clinical Practice and General Practice during the course.
Matthew Lewis

Western Australian Faculty of the Australasian College for Emergency Medicine Prize - to the student who receives the highest mark for the year incorporating the attachment rating and the emergency medicine elements of the end-year examinations.
Jian Wong
By Winthrop Professor Ian Puddey, Dean

One of the highlights of the last month was the privilege to attend the Golden Jubilee celebrations of the graduating MBBS year of 1962. This was the first group of medical graduates from UWA to complete all six of their undergraduate years at UWA. Because of the absence of a Medical School in Western Australia, previous graduands spent the earlier years of their course in Melbourne or Adelaide. This situation was ultimately redressed by the extremely generous support of the public of Western Australia through the 1955 Medical School Appeal which enabled the graduands of 1962 to commence at UWA in 1957. Since graduating they have had a celebration together every year. However, this year the celebration had an added dimension - modern technology enabled them to use Skype to establish an on-line video connection to Emeritus Professor David Sinclair in Aberdeen in Scotland. As Professor of Anatomy, he was one of the nine original Foundation Professors of this Medical School and, at 97 years of age, is the only one still living. Via Skype, he gave a very warm and erudite address to his students of 50 years ago and was clearly chuffed by the whole experience.

Rich legacy
Another highlight of the evening was when the M.C., Dr Lewis Blake, called on those with civilian and military honours to stand. Although the graduating cohort were just 35 in number, six had received an Order of Australia for their services to the profession and the community (Dr Gregory Deleuil AM, Dr Giuseppe Panizza OAM, Clinical Professor Trevor Parry AM, Clinical Professor Keith Shilkin AM and Dr Howard Watts OAM), one had received an imperial bravery award, the George Medal (Dr Raymond Swannell GM), and one had been named as WA Citizen of the Year (Trevor Parry). Their contributions demonstrate what a rich legacy each graduating class from the University of Western Australia has the potential to deliver.

Considerable diversity

During the evening I was able to acknowledge the pioneering efforts of the initial staff and students who helped found our Medical School, and also to reflect on how dramatically the Faculty has changed since those early years - changes in who we teach, where we teach, what we teach and how we teach. In terms of who we teach, that early graduating cohort exhibited considerable diversity – students from a broad social spectrum, many first generation Australians, many with rural backgrounds and several mature age entrants with already established families and previous careers. As the Medical School has grown, we have maintained a focus on preserving this diversity so that we remain a Medical School for all of our community. To this end, we have a proud record of actively recruiting and mentoring Aboriginal students, we consistently achieve recruitment of 25% of our current students from rural and remote Western Australia where about 26% of our community live and, more recently, we have commenced our Aspire program, recruiting students from schools in areas of socio-educational disadvantage. Finally, we now have a vibrant international cohort, particularly students from S.E. Asia, who enrich our School with their diverse cultures and heritage. In terms of what we teach, the Medical School is no longer a stand-alone Faculty at UWA. It has grown to incorporate under one umbrella the teaching of dentistry, nursing, podiatric medicine, health sciences and population health, and this year the disciplines of pharmacy and social work have also been welcomed into the Faculty. In terms of where we teach, the Medical School is no longer focused on the five big teaching hospitals alone and has a footprint that now extends to nearly all our secondary and outer urban hospitals, the private sector and rurally to 13 sites throughout WA. In terms of how we teach, the use of the internet, mobile phones and tablet devices has further changed the way medical education is delivered, with much of what is learnt arising from a rapidly expanding "hidden" curriculum - with students in many respects often ahead of their tutors! These changes continue apace with roll-out of the new MD curriculum from 2014 - a four-year graduate program which will ultimately replace our current undergraduate MBBS. The themes of the new course are summarised in the acronym PLACES – the doctor as a Professional, a Leader, an Advocate, a Clinician, an Educator and a Scholar and it is designed to optimally prepare medical practitioners for the 21st century.

Re-connect

In closing, can I wish you all a time of rich joy and blessing this Christmas. Can I also extend an invitation to all our alumni to re-connect with their University in the New year as the University celebrates 100 years since its first students commenced. There will be many university-wide activities during the Alumni Weekend of Feb 8-10 and Faculty events will culminate on the 10th with a panel discussion on critical issues for medical education in the 21st century. We would love to see you there.
An insight into the lives of medical students in the 50s and 60s is revealed in a yearbook of those who graduated 50 years ago from UWA.

The class of 1962, who embarked on their degree in 1957, were the first cohort to complete their entire medical degree in Perth. Other classes before had to go east for the early years of their degree.

The group held their golden medical reunion with their spouses on November 10 at the University Club.

For the yearbook, class members wrote submissions on studying medicine in the 60s, what they have done since graduating and what they are doing now. In some cases, the biography was written by a family member or friend.

A yearbook was given to every class member and there will be copies available in the medical library.

The reunion organiser was Dr Lewis Blake, who was M.C. on the night, assisted by Dr Howard Watts, who compiled the yearbook.

The event was made more special by the distinguished guests who attended, including Faculty Dean Winthrop.

Professor Ian Puddey, Clinical Professor Alex Cohen, who was a lecturer and tutor for the year group, and his wife Agatha, and Dr Ian Wallman, a former Faculty staff member who also taught the cohort, and his wife Rhonda.

Professor Puddey spoke about the history of the Faculty and what its future entails.

There was also a Skype session from Aberdeen, Scotland with Emeritus Professor David Sinclair, who is 97 years of age and the last surviving Foundation Professor of the Faculty, and Professor David Reid, Dean of the Medical and Dental School at the University of Aberdeen.

Professor Sinclair spoke about his warm memories of his years in Perth and teaching his students and reminisced about the difficulty he faced in establishing the new Anatomy Department by converting an old hut that had been part of a World War II seaplane base.

Dr Watts said that for all attending, the highlight of the reunion was to be able to have Professor Sinclair join them on Skype and for most it was a complete surprise that it had been arranged.

“Professor Sinclair was a great teacher and scholar,” Dr Watts said.

Another outstanding memory he would keep of the reunion was the universal gratitude they all felt to the people of WA who contributed so generously to the medical school appeal in 1955-56, believed to be the present day equivalent of $30 per head from every member of the population.

“It meant probably half of us who couldn’t afford to travel east to study medicine could now afford to (study medicine),” Dr Watts said.

About 20% of the year had had previous occupations for several years, about 20% had worked for one or two years until the Medical School opened and the remainder started the year after completing their secondary education.

“Strange as it may seem today, only two of the 35 graduates were women,” Dr Watts said.

His other special memories were the continuing camaraderie of the year group and the debt of gratitude they all felt towards their alma mater.

The class gets together annually for reunions.
Human genome

Already it has been recognised as achieving a huge amount in a short time in one of the smallest genomics laboratories in the world.

“This technology is applicable to any area of biological research, including those outside human beings,” Associate Professor Allcock said.

“We have sequenced humans, animals, plants, bacteria, viruses, DNA and RNA.” Work has included such diverse areas as the medical arena, cane toads, alpacas, dengue virus surveillance with the Queensland government, metagenomics with regard to soil quality and rehabilitation, and ancient DNA in fossils.

The facility, which also offers training, is staffed by Associate Professor Allcock and two laboratory researchers, Ms Nina Krescoje and Ms Vanessa Atkinson.

With this small group, it runs 24 hours, seven days a week – which means Associate Professor Allcock is often in the laboratory at night and on weekends.

“I am very connected electronically to the equipment,” he said. He can connect by computer or mobile phone and operate the equipment remotely. He receives email alerts from the machines if there is a problem.

“I regularly wake up at 3am and check in on the equipment,” he said. “There have been problems that have occurred at that time of night and there is really no choice but to get straight out of bed, straight in the car and straight into work because they need to be dealt with.”

- By Cathy Saunders

End of a culture?

Move over the Petri dish – the kingpin of genome sequencing has arrived.

The Ion Proton Sequencer simplifies metagenomics – the technique in which the researchers can look at genetic material from an environmental sample.

“We can look at a sample and look at all the bacteria in it,” Associate Professor Allcock said. “At the moment if you want to do that, you actually have to grow samples and for most of the bacteria that we know about, we don’t know how to grow them.”

The sequencer has changed all that.

“We just extract the DNA from the sample, whether it is soil or some other tissue and we can get a screen of all the bacteria that are present in that sample, completely unbiased.”

Associate Professor Allcock said it was possible the sequencer could eventually replace pathology cultures.

Serious Twitter

Twitter may have sprung up as a conduit for trivial posts about last night on the tiles or this morning’s cafe latte but it has evolved into a source of content relevant to medical education that can be used to engage university students.

Associate Professor Medical Education (eLearning), Diana Jonas-Dwyer, said it was a challenge to teach that Twitter could be used in research and education.

“There’s a lot of interesting educational stuff in Twitter and some staff have no idea it exists,” she said.

“If you search ‘retweeted’ there are a lot of educationally relevant postings.”

Twitter is an online social networking and microblogging service that allows users to send and read messages of up to 140 characters, known as “tweets”.

Associate Professor Jonas-Dwyer said lecturers could ask students to post links to resources. Twitter could also be used to continue class discussions, for class reminders and announcements, or to organise study groups.

“It is most effective when activities are planned and integrated into units,” she said.

It was also a low-stress avenue for students to ask questions and could be used to provide academic support or send helpful information. “Students might want to let you know (via Twitter) that something isn’t working properly and you can get onto it quickly,” she said.

Local doctors and educators could follow the lead of their US counterparts, who were increasingly starting to embrace Twitter.

Lecturers could ask students to create a separate Twitter account to be used exclusively for their university studies - which was preferable to employing its close cousin, Facebook.

“Often students don’t want us to be in their Facebook,” Associate Professor Jonas-Dwyer said.

“Facebook is really their social medium. Even though they may have a Facebook account that they use for interaction with other students, the feedback we’ve received is that they don’t really want us in there and most of our staff don’t want to be in there.”

While Faculty staff were becoming aware that educational tweeting was growing, there was still a long way to go to get them on board.

The introduction of the new Learning Management System (LMS) to UWA in January this year had paved the way for staff to embed their Twitter feeds or other content.

“Only a few people have expressed an interest and some are starting out by including their Twitter feed in their LMS units where they can tweet interesting facts or events to students,” she said. Most of the interest stemmed from lecturers in medicine.

Associate Professor Jonas-Dwyer said Twitter activity could contribute to unit participation marks in future but she was not aware of any university that had adopted such an approach yet.

Given the pitfalls of social media, staff had to monitor Twitter use and issue clear guidelines.

“Like anything, you want to tell the students what you are doing, why you are doing it and what you expect them to do,” she said.

Incorporating back channels (where students can post comments while the lecturer is speaking that appear in real time on a projector screen in the classroom) required another staff member to be present to monitor the tweets.

Associate Professor Jonas-Dwyer stressed that learning new technologies and using them in teaching were time-consuming tasks for staff and an additional barrier to their adoption.

“It is always a challenge getting staff up to date with different tools,” she said.

- By Amanda Saunders
Mr Ian McWilliam was diagnosed with the rare disorder of neurofibromatosis when genetics was in its infancy and the lack of knowledge that contributed to his untimely death last year has inspired his parents to donate $50,000 to the Faculty for research.

Dr Robert McWilliam, a Faculty graduate, and his wife Hilary, a retired GP, have given the money to support early to mid career clinical research in genetics.

“The hope of this donation is that Ian’s journey with neurofibromatosis was not in vain and that research through the university may be of benefit to others,” Dr Robert McWilliam said.

Supporting early and mid career researchers is one of the priorities of the Faculty.

“This donation is about getting post-graduate interest in genetic conditions and the abnormalities that can occur in people with those conditions,” Dr McWilliam, who is a semi-retired orthopedic surgeon, said.

The couple lost Ian, who was one of four children, to an aggressive Triton tumour last year. He was 36.

Triton tumours are 7 - 8 % more common in people with neurofibromatosis.

“We encouraged him to live as a normal individual – for him that was being healthy and hardly ever taking time off work or going to his GP,” Dr McWilliam said.

Ian was diagnosed at age eight with neurofibromatosis – also known as von Recklinghausen’s disease. It is characterised by multiple non-cancerous lumps that develop around the skin and is the result of a genetic abnormality that affects the formation of the protein neurofibromin.

“One of the problems with neurofibromatosis is that many people don’t know they have it,” Dr McWilliam said. About one in 3000 people have the condition.

Dr McWilliam said his son’s case was a genetic mutation because there was no family history of the disease. “I think people have to realise that genetic conditions pop up all the time because of mutations.”

His son was adamant that he should not be treated as disabled and worked as a part-time first aid assistant at the Australian Red Cross and on nightfill for Woolworths.

“He never admitted he had a disability and lived a pretty normal life,” his father said.

The Ian McWilliam Memorial Fund will be distributed through a small grant application process across five years.

- By Amanda Saunders
Personalised therapy research made possible

A novel personalised therapy for the incurable bone marrow cancer multiple myeloma is being developed by a team of Faculty researchers and a London-based biotech team, on the back of $101,000 in donations and funding to the Faculty.

It is $51,000 in generous donations from a group of Perth businessmen, led by multiple myeloma sufferer Mr Chris Perrott, and a one-year competitive research grant of $50,000, from Sir Charles Gairdner Hospital, that have made the project possible.

Winthrop Professor Wendy Erber, Head of the School of Pathology and Laboratory Medicine, said the new treatment would be patient-specific. It will use an abnormal protein secreted into the bloodstream by the tumour cells to target the cancerous plasma cells.

“This approach, if it works, would be novel because it is using one of the characteristics of the tumour itself as a way of targeting the tumour cells,” said Professor Erber, who is a chief investigator on the research project.

The protein construct – which will be used as a “truck” which transports the drug - would be injected into the bloodstream. It is the truck that will be patient specific, delivering it to the right site – the tumour cell.

“The construct would carry drugs which we hope will result in the cancer cell being killed - but we are long way off that stage,” Professor Erber said.

She envisages the treatment would have minimal systemic side effects, unlike the current non-targeted therapies for the condition.

Professor Erber’s fellow chief clinical investigator for the project is clinical haematologist Dr Bradley Augustson, clinical lecturer in the School of Medicine and Pharmacology, who specialises in multiple myeloma. Dr Augustson led the Faculty’s successful application for the $50,000 SCGH research grant.

Research Associate Professor Kathy Heel, of the School of Pathology and Laboratory Medicine, will perform much of the technical work on the project.

A medical development team is working on the construct in London, led by UWA commerce graduate Glen Travers.

It was a twist of fate that saw Professor Erber and Mr Travers united by a common purpose.

When Mr Travers’ longtime friend Chris Perrott was diagnosed with multiple myeloma in 2006 at the relatively young age of 51, it was an extra impetus to expedite development of treatment for the rare disease.

The two men approached the Leukaemia Foundation last Christmas to see what work was being done on the disease and if use could be made of the $51,000 raised by Mr Perrott and a group of 10 friends.

The Foundation contacted Professor Erber and so the liaison began.

“We were looking around for people to assist in Australia with this research and we stumbled on Wendy,” Mr Perrott said.

“And (Dr) Brad Augustson and (Clinical Professor) David Joske of the Haematology Care Centre at SCGH are putting a clinicians’ slant on it.” Clinical Professor Joske is also attached to the School of Pathology and Laboratory Medicine.

Six blood samples from multiple myeloma patients, including Mr Perrott, have been sent to London to ascertain the crucial “proof of principle” of this new approach. Analysis of the constructs to assess their ability to bind to patients’ plasma cells would be conducted in Perth before the New Year, Professor Erber said.

The funding for the first phase of the project would cover the first 10 patient blood samples.

“At this stage we need some provisional results to prove the principle that this really is an approach that may prove beneficial,” she said.

“If proof of principle says that it doesn’t work, then we will change direction.”

Mr Perrott said the construct – or micelle – had already proven successful in targeting his affected plasma cells.

“Whether they are able to do anything in my lifetime with all the regulations, I don’t know, but at least it will be a pathway for future,” he said.

Despite the development of new chemotherapy, drugs and transplantation to treat the disease, the medium survival for multiple myeloma sufferers is five years, with about a third of patients living for 10 years after being diagnosed.

Multiple myeloma usually affects people aged in their 60s. About 1000 Australians are diagnosed with it each year.

“It is a bad disease from the point of view of morbidity,” Professor Erber said.

“Blood and bone marrow diseases are not normally painful but this has the reputation for being a painful disease. The malignant cells cause bone destruction and bone fractures are a problem.”

Other complications included anaemia, renal failure, infections and high calcium levels.

The standard treatment for multiple myeloma is chemotherapy and its side effects include nausea, vomiting and hair loss.

“The drugs used are toxic to normal bone marrow and can have complications of anaemia and bleeding,” Professor Erber said.

The nascent protein construct approach is likely to avoid these side effects because it will deliver the toxin, the cell killing agent, directly to the tumour cells.

Another element crucial to the project has been the opening of the Translational Cancer Pathology Laboratory in the School, which focuses on “laboratory to bedside” medicine. LotteryWest spent $1.2 million on equipping it.

“Without the laboratory, the project wouldn’t have happened - much of the new equipment will be used to do this work,” Professor Erber said.

- By Amanda Saunders
Working in reverse

A virtual reality machine is being used to help would-be dentists see if they enjoy performing dental procedures and can handle working with a mirror image.

Associate Professor Erica Yates, of the Faculty’s School of Dentistry, has used the Moog Simodont Dental Trainer to enable candidates applying for the new Doctor of Dental Medicine (DMD) course to experience the practical side of dentistry on their interview day.

“They have the opportunity to experience the drilling tasks before they actually enter the course,” she said. “It has been quite useful because they get an idea of how difficult it can be.”

Associate Professor Yates said some young students had never had a filling and were not aware of the need to learn to drill.

Another major skill was using a reflected image. “Only about 20 per cent of the mouth can be seen directly and for 80 per cent we need to use a mirror,” she said.

A new simulation laboratory with 14 Simodont units was officially opened at the School by UWA Vice-Chancellor Professor Paul Johnson last month.

Three units were acquired using generous donations from alumni. Funding for the other 11 units plus maintenance and the refurbishment of the seminar room to house them was provided by Health Workforce Australia to the tune of $1.5 million.

Each year, dental students from UWA, Bachelor of Oral Health Students from Curtin University and TAFE students in dental professional courses will benefit from having access to the simulators, which accelerate the hand-eye coordination and manual dexterity skills essential for the dental profession.

Winthrop Professor Andrew Smith, Head of the School of Dentistry, said the School was the first in Australia to have a fully operational and integrated simulation laboratory with 14 Simodont units.

Professor Johnson said the education sector was entering a new area of teaching and learning and would face some radical changes in the near future.

Students entering university were the first generation of pupils to grow up with computers, search engines and online learning right from the start of primary school.

Embedding haptic virtual reality simulation training in the new dental curriculum is therefore considered timely and is leading the way in dental education in Australia.

Students work on the individual workstations which have a computer screen and haptic technology with force feedback motors providing the tactile experience for the skills training tasks. The parameters for the various tasks have different levels of difficulty which offer a graded series of challenges to the students.

“The big plus is that when they are doing their manual dexterity training tasks, the students have constant objective feedback with a percentage score about how well they are doing,” Associate Professor Yates said.

The tutor can use a master screen to watch the students working on their screens and if they are struggling, walk over to help them. Individual workstation screens can also be projected onto a large screen for class teaching.

The students can practise a myriad of dental procedures before progressing to phantom heads with plastic or sterilised extracted natural adult or deciduous (baby) teeth.

“Accessing suitable numbers of extracted teeth for training purposes is difficult,” Associate Professor Yates said. “We are very grateful to the dental profession for their support with our collection program for extracted teeth. However, we are still short of some teeth types such as deciduous, first molar and incisor teeth.”

- By Cathy Saunders
A research project into the medication checks of patients discharged from a metropolitan hospital back home to the bush will be undertaken by the national Pharmacist of the Year.

Winner Deirdre Cridde, a visiting clinical lecturer in the School of Medicine and Pharmacology since 2006, said the project called City-Country Medslink aimed at ensuring that patients discharged from Sir Charles Gairdner Hospital (SCGH) had a Home Medicines Review by a pharmacist within seven days of returning to Kalgoorlie or Geraldton.

The research is a joint project between UWA, SCGH and the Goldfields-Midwest Medicare Local.

Ms Cridde is one of two pharmacists associated with the Faculty who have won important national awards. The other is Louise Gabrovsek, who obtained her Masters in Pharmacy from UWA in June and has been named National Pharmacy Student of the Year.

Ms Cridde said her role with Pharmacy in the Faculty included teaching the pharmacotherapy and medication review unit and taking students on external visits.

“I have been a visiting lecturer alongside Dr Pradeep Jayasuriya, a GP from Cloverdale,” she said. “We have aimed to provide a hands on approach, visiting patients in their homes, or residents in aged care facilities, to provide an insight into this developing role for pharmacists.”

She also works part-time at Sir Charles Gairdner Hospital as Acting Executive Officer in pharmacy, looking at the off-label use and cost of drugs and updating the formulary, is a facilitator for NPS MedicineWise which involves talking to GPs and allied health professionals about evidence-based prescribing and topics of interest such as diabetes, carries out Home Medicines Reviews for the patients of four local GPs and provides medication review services to two aged care facilities.

She has been a pharmacist since 1986.

Associate Professor Rhonda Clifford, Deputy Director of Pharmacy and of Pharmacology in the School of Medicine and Pharmacology, said the Pharmacist of the Year was a prestigious national award.

“It is a once in a life-time award – only awarded to the very best innovators, leaders and outstanding pharmacists,” she said.

In the Pharmacy Student of the Year competition, WA state winner Ms Gabrovsek competed at a national pharmacy conference against six state finalists and a “wild card entry” in front of pharmacists with up to 50 years’ experience.

“It is a medication counselling/ primary health care role-play competition against a representative from each state,” Associate Professor Clifford said. “It requires excellence in clinical knowledge as well as excellence in patient interaction skills – a lovely combination.” Ms Gabrovsek, 24, who also won the Audience Choice award, said she would like to build on some research she had conducted as a pilot project during her Masters degree, when she looked at the facilitators and barriers to patient assessment in WA community pharmacies.

Having graduated from the Faculty’s two-year Master of Pharmacy course, she is now completing the requisite 1,824 hours of practice in her intern year at a community pharmacy.

Briefscope

Three Faculty members have won a prestigious WA award for their research that ranges from affordable respiratory disease vaccines to the genetics of glaucoma and the action of medications.

Associate Professor Kevin Pfleger, head of Molecular Endocrinology at the WA Institute for Medical Research (WAIMR), Research Assistant Professor Lea-Ann Kirkham, a researcher with the Vaccine Trials Group from the School of Paediatrics and Child Health, and Dr Alex Hewitt, from the Lions Eye Institute, were winners of this year’s WA Young Tall Poppy Awards.

Associate Professor Pfleger has made discoveries relating to the interactions of proteins that regulate how cells respond to hormones and neurotransmitters and helped improve the way pharmaceuticals act on the human body.

Research Assistant Professor Kirkham has looked at the causes of bacterial respiratory infections and ways to reduce the burden of disease.

She has developed a potential pneumococcal vaccine candidate, resulting in three international patents. Her vaccine candidate is now in Phase I clinical trials.

Dr Hewitt, a glaucoma genetics researcher, is examining the molecular profile of cells in the retina of people with glaucoma and comparing them with people who have no signs or family history of the disease.

It is hoped that his research will lead to the development of better screening tools and treatment options.

Associate Professor Rosemary Saunders, former course coordinator for the Master Nursing Science Program in the School of Population Health, has been awarded a top nursing prize for her role in developing an innovative community partnership where nursing students work with older adults in learning activities.

She led the establishment of Beyond the Teaching Nursing Home – A Community Partnership of Learning and Care, a collaboration between the Faculty and the Bethanie Group.

Associate Professor Saunders won the Education category of the WA Nursing and Midwifery Excellence Awards.
Alma mater to entertain alumni

This is our Faculty program:

Saturday 9 February

Venue: CTEC Building, Multifunction room

10.30am Welcome from the Dean, Winthrop Professor Ian Puddey.

10.45am History of the Faculty by Clinical Professor Kingsley Faulkner, who will also give his reflections on the medical alumni. Some alumni may be aware that Medicine will be a postgraduate degree in 2014.

11.15am New Medical Curriculum and question time by Winthrop Professor Tony Celenza.

Venue: CTEC Building, Courtyard

12 to 1.30pm Lunch with the Dean. Alumni of the faculty and their guests are invited to meet the Dean, Winthrop Professor Ian Puddey and enjoy a light lunch.

Venue: CTEC Building, Multifunction room

Medical Research presentations I. The Faculty of Medicine, Dentistry and Health Sciences leads a very successful research program, carried out in laboratories, hospitals and the WA community. The Dean is proud to introduce some of his finest researchers who will present their significant research findings.

1.30pm Alzheimer’s disease by Winthrop Professor Leon Flicker, who will discuss his research on the frightening grip that Alzheimer’s has on many people in today’s society.

2pm Hypertension by Emeritus Professor Lawrence Bellin, who will speak about his research into the disease that affects many.

2.30pm End of life by Dr Doug Bridge, who will present his fascinating research.

Afternoon Tea

Venue: QEII Medical Centre

3.30pm Pathology Tour by Winthrop Professor Wendy Erber, at the Pathology Building, M Block, QEII Medical Centre. The Pathology Building renovations are complete and the new facilities will be unveiled. Alumni are also welcome to visit the FA Hadley Museum which houses more than 3500 tissue specimens (valued at $35 million) containing a range of diseases and pathological processes.

4.15pm Tour of the Oral Health Centre of WA by Winthrop Professor Andrew Smith. You will visit the modern clinical facilities and laboratories, the Founding Professor’s Walkway and the exciting new virtual reality simulator that offers our dental students the ability to upskill their hand-eye coordination.

Sunday 10 February

Venue: CTEC Building, Multifunction room

Medical Research presentations II. Following Saturday’s research presentations, hear from more of the Faculty's finest researchers who present their significant findings.

10.30am Early origins of disease by Winthrop Professor Susan Prescott.

11am Focus on families: inherited cardiovascular conditions by Winthrop Professor Gerald Watts.

11.30am Neonatal research by Winthrop Professor Karen Simmer.

12 to 1.30pm Lunch

Venue: CTEC Building, Multifunction room

1.30pm Panel discussion - Critical issues in medicine with Clinical Professor Kingsley Faulkner, Dr Rosanna Capolungia, Winthrop Professor Timothy Davis, Winthrop Professor Fiona Lake and Nobel Laureate Professor Barry Marshall.

There are many successful alumni of the Faculty who have had illustrious careers. The Dean is honoured to have several of these prestigious individuals participate in a panel discussion. They will present their views on the critical issues for medical education in the 21st century and as a consequence those confronting medical schools.

3pm Afternoon tea

Quiz

In addition, a quiz night will be held by the Health Sciences Alumni Association to celebrate the Alumni Weekend in advance. It will take place on Monday 4 February at The Charles Hotel at 7pm. All proceeds will go to charity - the Association for Services to Torture and Trauma Survivors (ASeTTS).
Turning out techno-savvy scientists

New e-learning “dry” practical sessions will feature in a state-of-the-art world class teaching program to be delivered by the School of Pathology and Laboratory Medicine (PaLM).

The New Approaches to Teaching (NATT) team received $1.7 million in funding to create and deliver curriculum reform in refurbished classrooms, which support the inexpensive “dry” laboratory sessions and can accommodate ever-increasing class sizes. UWA’s Vice-Chancellor Professor Paul Johnson and Faculty Dean Winthrop Professor Ian Puddey have thrown their support behind the project.

Head of School Winthrop Professor Wendy Erber said over three years, the NATT team would provide educational support to help modernise teaching through the introduction of computer-assisted learning and assessments and interactive e-learning.

“We aim to replace expensive traditional “wet” practicals with modern computer-based delivery methods that allow for improved teaching and learning quality through self-directed learning, increased student collaboration and prompt student feedback,” Professor Erber said.

The School is also working with Facilities Management and Information Services in providing the necessary e-learning suites, hardware, server, software, web access and wireless network upgrades to the new teaching program. As part of this development, undergraduate students enrolled next year in the Microbiology and Immunology major and the Pathology and Laboratory Medicine major will receive 3rd generation 32Gb wi-fi iPads.

The NATT team also provides work experience opportunities to UWA students to develop online teaching modules.

A $3000 Improving Student Learning Grant enabled the NATT team to offer a scholarship for an undergraduate student in Pathology to design evaluable tutorials that include inbuilt questions and feedback.

Furthermore, a team of six third year Computer Science students, as part of a third-year unit, completed a programming project creating a virtual microorganism library with interactive microscope controls.

The NATT team is currently working on projects ranging from virtual microscopy to online case studies, student-created content, authentic simulations and learning activities incorporating current, unanswered research questions.

Academic Leader of the NATT project, Associate Professor Kimberley Roehrig, said learning activities were designed with input from supervisors and graduate employers.

“Students work with the same software used by scientists in the field,” she said. “This ensures that our curriculum is linked to real-world applications and increases our students’ employability.”

The team works from an online project board that all PaLM staff can view via web based project management application Trello.

Anyone who has an idea for an e-learning activity or is interested in finding out more about the project is encouraged to visit www.nattproject.com or contact Associate Professor Roehrig at kimberley.roehrig@uwa.edu.au

Stories by Administrative Officer Jake Dennis, School of Pathology and Laboratory Medicine

Training scientists in cutting-edge technologies is among the aims of an innovative teaching strategy in the School of Pathology and Laboratory Medicine (PaLM).

The New Approaches to Teaching (NATT) team has been working since July to create online teaching and learning content in preparation for an influx of 600 students enrolled in the School next year.

Academic Leader of the project, Associate Professor Kimberley Roehrig, said the team’s aims included keeping up with trends in higher education research and trialling novel methods of teaching. Other aims were to support staff with lesson design, assessment and integration with the Learning Management System (LMS) and plan fun and engaging activities that kept students motivated to achieve a higher level of understanding.

She heads the NATT team that includes Administrative Officer Jake Dennis and the newly appointed Education Officer Peter Browne.

“PaLM teaching staff understand the demands on the modern scientist and the skills students need to excel in a highly competitive environment,” Associate Professor Roehrig said. “Our team helps our teachers to help students meet those needs.”

The team encourages teaching staff to incorporate technological advances into teaching to become Technological Pedagogical and Content Knowledge (TPACK) savvy - a necessity for future teachers in an increasingly digital global study and working environment. “Careers in the Biomedical Sciences are not what they used to be so we can’t expect the teaching methods we’ve relied on for decades to serve us well in the future,” Associate Professor Roehrig said.

“Our aim is to prepare scientists who are fluent in cutting-edge technologies and who can adapt to new tools for studying biological systems.”

Each month NATT organises workshops for the School, covering topics such as classrooms built for higher education, teaching and learning with technology, using iPads for learning in and outside the classroom, and assessment and content planning for unit coordinators.

To increase their skills and knowledge about online learning, team members have attended workshops hosted by the Centre for the Advancement of Teaching and Learning (CATL), the Higher Education Research and Development Society of Australasia and the Academic Staff Association of UWA.

They have participated in Massive Open Online Courses and visited state-of-the-art teaching and learning facilities at Monash, RMIT and the University of New South Wales.

Head of School Winthrop Professor Wendy Erber said she was excited that the team would promote an enhanced innovative educational approach to provide students with a more contemporary educational experience and improved educational outcomes.

e-labs, iPads, web and wireless - it’s all part of the learning scene

DENNiS AT WorK oN THEir iPADS

WiNTHroP ProFESSor WENDy ErBEr AND Mr JAKE DENNIS AT WORK ON THEIR iPADS
Students tackle the outback

Twenty-one nursing students from the Faculty of Health Sciences have had the chance to develop strong ties with the country during placements that span the State.

They were taking part in the Masters of Nursing Science program’s Rural Health Nursing unit delivered by CUCRH last month.

The students were placed in various locations covering thousands of kilometres throughout WA, including Derby, Port Hedland, Geraldton, Mount Magnet, Morawa, Meekatharra, Goomalling, Merredin, Narrogin, Gnowangerup and Albany.

Settings included primary hospital sites, private practices and Aboriginal Medical Centres. CUCRH’s placement coordinator Ms Judy Riggs said the students benefited from a two-hour tutorial every week during their three-week placement.

“The tutorial was delivered by staff based at CUCRH in Port Hedland and Geraldton and engaged students via a comprehensive virtual Blackboard Collaborate platform designed specifically for education,” she said.

“Students from all sites attend the online classroom at the same time and connect, network and chat with their peers and lecturer.

“We provide technological, educational and accommodation support, among a multitude of other things, to UWA students completing this unit every year.”

Ms Riggs said that planning and coordination started the year before the placements.

“We have already started working on students completing their placements in 2013,” she said. “We are expecting numbers close to 40 next year. This is a massive increase which we look forward to contributing to.

“This program works in line with CUCRH’s objectives to help boost the future make-up of our rural medical workforce and increase the chances for nursing and allied health students to ‘bond’ with the country lifestyle and return for practice after their graduation.”

Understanding the impact of menopause

Many Aboriginal women, including Aboriginal health workers, lack understanding of what menopause involves and report fear of symptoms, according to two budding researchers.

Faculty medical students Janelle Jurgenson and Emma Jones conducted a study over the past two years on Aboriginal women’s experience of menopause.

They were helped by CUCRH’s expertise, supervision and close connections with the Midwest Aboriginal community.

“Despite extensive literature demonstrating different experiences in menopause between cultural groups around the world, the documented experience of menopause in Australian Aboriginal women is scarce,” Ms Jones said.

“This study aims to increase our awareness and understanding of Australian Aboriginal women’s experience of menopause and the impact of menopause on these women’s lives.”

Ms Jurgenson said the research included views from 25 Aboriginal women from the Midwest and showed there was a need for more education specifically targeting Aboriginal health workers and women.

“Taking into account Aboriginal women’s perceptions of menopause will be critical to establish how education and information needs to be delivered,” she said.

“There may also be a need to further educate Aboriginal men to increase their understanding, given that a number of women acknowledged that a supportive partner is particularly helpful in coping with the transition.”

The two students presented their findings at the 6th Annual Rural Health Conference in Busselton and at various centres and locations in Geraldton this year.

“Working with such high-calibre staff from CUCRH, health workers and the Aboriginal community in Geraldton was a very uplifting experience for us,” Ms Jones said. “We had an overwhelming amount of support from everyone and really felt like we belonged with the organisations we worked with.

“We hope that the findings from our study will add to the knowledge and understanding of menopausal transition for Aboriginal women and assist Aboriginal health workers and practitioners to overcome barriers and stumbling blocks identified in this study.”

nobakkibaby

Cutting the exposure of Aboriginal children to second-hand tobacco smoke has been the target of a project in the north of the State.

The “Smoke Free Kids” campaign was an extensive five-year research project in which members of the Hedland community and local service providers and businesses were surveyed, with the aim of helping reduce health-related risks due to smoking.

It was carried out by the Combined Universities Centre for Rural Health (CUCRH) and completed this year, with funding from Healthway.

The study found that half of Aboriginal adults living in Port Hedland and South Hedland in late 2006 were smokers.

Surveys completed by the local Aboriginal community indicated that most families had rules around prohibiting smoking in their homes. However, 30% of responses showed that people lived in homes where someone smoked inside at least once a week or within close distance of the premises.

CUCRH’s research team, spearheaded by Associate Professor Juli Coffin, and other research partners worked with the community, families and organisations and services addressing health and well-being of young Aboriginal children to set up a local Tobacco Action Taskforce. It supported organisations to develop smoke free policies, using a series of culturally secure strategies.

The research team also looked closely at a social marketing program that was practical, needed and that celebrated cultural strengths. The study culminated in television commercials showcasing family interventions and actions that aim to help reduce tobacco smoke exposure of Aboriginal children in the Pilbara and, more recently, in the Midwest.

A series of infomercials were created and will continue to air on a local television channel until next March. The infomercials are also regularly aired at health services and have been uploaded to the popular video viewing site, YouTube. Search for “nobakkibaby” to see the 13 infomercials.
A toolkit to stop patients falling through the cracks

A tool aimed at ensuring migrants and refugees with mental health problems do not miss out on essential care is being rolled out by a Faculty unit.

The National Cultural Competency Tool (NCCT) is a practical and easy to use audit package to make it easier for mental health services to assess people from culturally and linguistically diverse (CALD) backgrounds and work across cultures.

The rationale is that culture, language, traditions and beliefs have implications for mental health and how illness and its treatment are delivered and interpreted.

The resource is expected to lead to more accurate diagnoses and more positive clinical outcomes.

The Community, Culture and Mental Health Unit (CCMHU) of the School of Psychiatry and Clinical Neurosciences received funding from the Mental Health Commission to refine the tool and train people in its use.

Ms Gillian van der Watt, Senior Research Officer in CCMHU, said the tool encompassed eight standards - the National Cultural Competency (NCC) standards - that relate to providing appropriate mental health services for migrants and refugees.

“It has a ‘how-to’ guide and we are running training sessions to talk to people about how the tool works and to ‘sell’ it in a way, reinforcing that these standards are aligned with a number of national and state accreditation standards,” she said.

The trainers go out to various government, non-government organisations (NGOs) and private mental health services to introduce the tool and deliver the training.

The toolkit also includes practical examples and a self-assessment checklist.

The eight NCC standards cover eight domains and include, for example, that a service should have support from senior management to develop transcultural mental health initiatives.

Another example of a standard is one which states that services should have a language services policy and make use of interpreters.

“This is very important because there are some services that believe you can use family members to do the interpreting,” Ms van der Watt said.

Another standard recommends making mental health cultural competency training available for its staff.

This involves an understanding of the cultural nuances of different cultures. “The course material should take into account the importance of working transculturally, taking into account our own cultural belief systems and those of the person we are working with,” Ms van der Watt said.

Staff also needed to learn how to conduct mental health assessments in a culturally sensitive way.

“If organisations do not have the capacity to support the needs of multi-cultural Australia, it does mean that people with mental health problems are going to fall through the gaps,” Ms van der Watt said.

“They have to feel that they can access services, which they do reluctantly if at all, at the moment.

“They need to know that the services are friendly and that they will have access to interpreters and people who are willing to listen, be supportive and culturally sensitive.

“The concern is they will perhaps not access services and then deteriorate and end up in hospitals, particularly if they are from another country, have just arrived and don’t have the community and family supports.”

Ms van der Watt said WA was the most culturally diverse State in Australia, with almost one-quarter of the country’s population having been born overseas and coming from many countries the world over.

As part of the training, participants are referred to a free mPod download on the web which is available to public mental health services and which focuses on cultural competency training for staff.

“People can use this resource for cultural competency training,” Ms van der Watt said.

“And it is interactive so you can answer questions and be rated and come back to it, you don’t have to do it all at once.”

A pilot is being run in the NGO sector to determine its usefulness for mental health programs in that sector.

The tool and the training sessions are free to public, private and NGO mental health services and programs.

Ms van der Watt said there was a possibility standards would be developed for Aboriginal people if funding could be obtained sometime in the future.

More information is on the website at www.psychiatry.uwa.edu.au
the word is out - Faculty in the news

**Quoted as Saying**

**The West Australian**

Winthrop Professor Gerald Watts, of the School of Medicine and Pharmacology, is QAS overweight West Australians could slash their risk of dying from cancer and type 2 diabetes by dropping their weight by a modest 10%. He said emerging research suggested that amount of weight loss could cut the risk of death from cancer by 40%, death from diabetes by almost one-third and other obesity-related causes of death by one-quarter. A 10% weight loss for moderately overweight men and women would be on average 7-8kg. People losing that amount of weight would also improve their blood pressure and cholesterol levels. Even a 5% weight loss would have tangible health benefits, he said.

Professor Daniel Fatovich, of Emergency Medicine, is QAS that establishing a definition of an “appropriate” emergency room visit is difficult, with some seemingly benign symptoms masking dangerous possible consequences. “People don’t turn up at emergency with a diagnosis tattooed on their forehead,” he said. He was commenting on a study published in the Medical Journal of Australia that found the availability of 24-hour medical helplines was having a minimal effect on emergency room overcrowding. It showed that many patients attended Royal Perth Hospital’s emergency department after phoning the 24-hour healthdirect medical service, despite being advised to visit a GP or being given other treatment advice. Patients referred to hospital by their GP recorded the highest level of “appropriateness”, the highest hospital admission rates and the highest level of “appropriate” ambulance use. Although Professor Fatovich acknowledged the value of telephone health services, he said their cost could not be justified on the basis of reducing pressure on emergency departments.

Professor George Yeoh, Head of Liver Disease and Carcinogenesis at the WA Institute for Medical Research, is QAS hepatitis C is increasing at a very, very high rate. “Unfortunately, many of these situations are what we call lifestyle caused - people can avoid it,” he said. “Hepatitis is spreading in our community because of an increase in drug use.” He was commenting on a study published in the Medical Journal of Australia that found the availability of 24-hour medical helplines was having a minimal effect on emergency room overcrowding. It showed that many patients attended Royal Perth Hospital’s emergency department after phoning the 24-hour healthdirect medical service, despite being advised to visit a GP or being given other treatment advice. Patients referred to hospital by their GP recorded the highest level of “appropriateness”, the highest hospital admission rates and the highest level of “appropriate” ambulance use. Although Professor Fatovich acknowledged the value of telephone health services, he said their cost could not be justified on the basis of reducing pressure on emergency departments.

**Medicine Today**

Clinical Associate Professor Roger Goucke, of the School of Medicine and Pharmacology, is QAS new research shows the large symptom load that patients with type 2 diabetes carry. He was commenting on a study published in the Journal of General Internal Medicine that found that pain and non-pain symptoms were common among patients with diabetes. The study group was aged 30 to 75 years. Common symptoms were acute pain, chronic pain, neuropathy, fatigue, sleep disturbance and depression. “The study demonstrates that both acute pain and chronic pain are common in people with diabetes... so this is a significant added burden on top of their diabetes,” Clinical Associate Professor Roger Goucke said.

**News Weekly (Merimbula), NSW**

Research Assistant Professor Hayley Christian, of the School of Population Health, is QAS it’s really important for all of us to find at least 30 minutes each day to get up and move around. Her research showed that pooch owners are right on track, doing an extra 55 minutes of walking each week compared with non-owners. About 40% of households have a resident four-legged personal trainer. Dr Christian’s research shows that more than 60% of dog owners achieve the recommended levels of 150 minutes of physical activity each week. “The simple act of walking for half an hour each day can reduce your heart disease risk by up to half and Heart Foundation walking groups can help you reach that goal,” she said. More than 60% of Australians tip the scales into either the overweight or obese category.

**Kalgoorlie Miner**

Winthrop Professor Jonathan Carapetis, Director of the Telethon Institute for Child Health Research, is QAS a home-visiting service for indigenous mothers in Kalgoorlie is a fantastic community investment. The Ngunyijtu Tjiiti Pirni’s (NTP) New Directions program targets women from rural communities who go to Kalgoorlie to give birth. The award-winning NTP indigenous health service was developed to address high rates of maternal and infant death and illness in rural WA. “The home-visit model they’re using - providing a holistic service, connecting them to social support systems, following up - we know that’s a model that works,” Professor Carapetis said. There might be a role for research to link with the program to see just how effective it is and whether it should be expanded, he said.
Rethinking two major mental disorders

Bipolar disorder and schizophrenia appear to share the same genetic basis and are not so different as was previously thought, according to a Faculty psychiatry professor.

“They are clearly different disorders and they have different symptoms but from a genetic point of view, they look very much alike,” said Professor Nikos Stefanis, of the School of Psychiatry and Clinical Neurosciences.

“Genetics has forced us to rethink our classification systems.”

Research in which he was lead investigator has identified a variation of a gene strongly associated with both mental disorders.

The findings describe for the first time the genetic locus responsible for the modulation of paranoid beliefs and experiences in the general population.

Professor Stefanis, who is also consultant psychiatrist at North Metropolitan Health Service - Mental Health, said the gene, ZNF804A, was discovered a few years ago to be associated with schizophrenia and bipolar disorder.

“The problem was that it was discovered atheoretically just by comparing genes between healthy people and people who were ill and the actual mechanism by which this candidate gene might increase your risk for psychiatric disorders like schizophrenia and bipolar disorder was completely unknown,” he said.

Since 2008, various theories had been proposed, including that the gene might influence attention and working memory, or that it might be associated with brain structure, and thus contribute to increased risk for psychiatric disorders.

Professor Stefanis said because everyone has variations of the gene, he and his co-researchers decided to study the general population.

Using a large study cohort of 1507 healthy young men who were army conscripts in Greece, the researchers examined their DNA as part of the Athens Study of Psychosis Proneness and Incidence of Schizophrenia (ASPIS).

“What we found out to our surprise was that this famous gene that we were told had a variation associated with schizophrenia and bipolar disorder seemed to be associated in these (1500) normal conscripts just with one thing,” Professor Stefanis said.

That one thing wasn’t their cognitive ability, or their IQ, or their reaction to stress, or brain structure, or sustained attention or working memory.

The gene variation was associated only with ideas of reference and paranoia. This meant people with it had a tendency to misinterpret social cues in the environment, which would otherwise be normal and insignificant, as very personally relevant and possibly dangerous, Professor Stefanis said.

For example, people with paranoia/ideas of reference would answer “yes” to questions such as “Do you ever feel as if things in magazines or on TV were written especially for you?” or “Do you ever feel as if you are being persecuted in some way?”

Professor Stefanis said the findings were important.

“It says possibly this is the mechanism by which this gene increases the risk of schizophrenia and bipolar disorder,” he said.

But there were likely to be many more genes that contributed to the risk.

“None of these genes that we think are associated with increasing the risk for schizophrenia and bipolar disorder confers a great risk,” he said.

Even for those who had this particular variation of the gene - and that amounted to 10-15 % of the population - their risk of developing one of the mental disorders was still miniscule.

It was likely to be the cumulative effect of many genes of small effect that led to development of such disorders, Professor Stefanis said. Moreover, an environmental trigger might be needed.

“The buzzword is gene-environment interaction,” he said.

The findings could eventually be clinically useful.

“The first step is identify genes, the second step is manipulate genes, and the third step is create medication,” he said. “We are far away from that but it is certainly a first step.”

The study involved two research groups - from the University of Athens and the National Institute of Mental Health in the US.

The findings were published last month in the Schizophrenia Bulletin, a prestigious psychiatry journal.

- By Cathy Saunders

Answers to the quiz on page 14

1. The glutei muscles.

2. A situation where exercise has a deleterious effect on the blood supply of a system not directly involved by the exercise.

3. Bigelow’s.

4. Scottish surgeon John Hunter, during experiments with gonorrhoea.

5. New York, U.S.A.
I’m OK. How about you?

An innovative strategy to help safeguard the mental health and well-being of social work students on placement is attracting the attention of universities across Australia. The strategy, “I’m Fine. How are You?”, was prompted by the unsatisfactory experience of a social work student on her first placement.

Assistant Professors Katrina Stratton and Sue Bailey from Social Work and Social Policy developed the strategy, a Prevention and Support program funded by an Equity and Diversity grant, in consultation with students.

It involves a series of seminars where students develop an individual mental health and well-being plan, implement it and then refine it for their final placement.

Each year, there is a cohort of about 30 Master of Social Work students who undertake two full-time placements over the two-year degree.

Their placements take place in a myriad of organisations, including hospitals, child protection, corrective services, child development centres, outreach mental health services and many non-government groups.

It is accepted that while placements can be exciting and challenging, they can also be a time of vulnerability and stress.

“Part of the challenge of social work is the exposure to other people’s trauma and challenges and difficulties,” Assistant Professor Stratton said.

As Social Work is a post-graduate degree, many students are mature-age and work and have children or care for their parents.

The majority of placements are unpaid and students often continue in paid work on top of their placement hours, adding to strain on their physical and mental health. “But in my 10 years of teaching social work, I have never had anyone come out of a placement and say ‘No, this (social work) is not for me’,” Assistant Professor Stratton said.

The success of the initial project has led to an expanded strategy, “A Place for ME”, in which the impact of assessed work placements on the mental health and well-being of all students at UWA is being researched.

With the help of a second Equity and Diversity grant, a project officer has held inquiry groups with students from other disciplines who have some form of assessed placement, including medicine, nursing, engineering, business and law.

These sessions culminated in students providing feedback to a placement working party that has been established by the university.

It is hoped the strategy will help address issues of recruitment and retention by sustaining practitioners who go out on work placements.

This year Assistant Professors Stratton and Bailey received a UWA Teaching Fellowship to continue this work.

The fellowship will provide a means for students and field educators to work together to develop a mental health and well-being workshop to build relationships and ultimately enhance the experience of all UWA students on assessed placements.