Achieving universal excellence

By Lindy Brophy

After years of research, months of planning and weeks of waiting, the decision finally went our way.

The much-anticipated Square Kilometre Array – the world’s most powerful radio telescope – will be built in the Murchison region of WA … and in South Africa.

The SKA Organisation board of directors has shared the world’s biggest science project between the two best sites.

Nearly three years ago, the International Centre for Radio Astronomy Research (ICRAR), a joint venture between UWA and Curtin University, was launched, with the headquarters based on our Crawley campus. It started with $20 million from the State Government of WA to grow new skills and develop new capabilities to give WA the best chance of hosting the SKA. ICRAR is now a Centre with funding of around $130 million and has grown quickly in the past three years to 70 staff and 35 graduate students.

As deadlines came and went earlier this year, it looked increasingly as though a compromise would be reached. But ICRAR director, UWA Professor Peter Quinn, says the final decision plays to the strengths of both sites, as well as utilising the existing investment by both teams.
“Achieving universal excellence from page 1

“The low and middle frequency components to be deployed at the Murchison Radioastronomy Observatory (MRO) in the first phase of the SKA will concentrate on the survey science aspects of the SKA mission,” he said.

“The MRO is a fantastic site for low and middle frequencies due to the lack of FM radio and mobile phone interference. The Republic of South Africa site will focus on the high frequency mission of the SKA, which will benefit from the attributes of that site.

“ICRAR is at the right place at the right time to benefit from this announcement. We have exactly the skills and capacities to begin contribution to both the SKA technologies to be placed in WA through our involvement in information and communication technology, international low frequency aperture array technology research and the Murchison Widefield Array project.”

As the final decision drew closer, ICRAR staff and supporters were gathered at their UWA base on the night of Friday 25 May. With them were some of the ICRAR Board members, Dr Bernard Bowen, Professor Alistar Robertson, Phillip Jenkins and Graham McHarrie, as well as a team from the State Department of Commerce, including the Minister for Science, John Day.

“We heard the announcement from the Netherlands about 8pm,” said Dr Renu Sharma, general manager of ICRAR.

“Peter (Quinn) opened a bottle of champagne and we all celebrated. It was very exciting, after such a lot of hard work by everybody.”

Professor Quinn said the dual site decision had been taken after the SKA Organisation looked at the best options and ensured that a dual site was scientifically possible.

“One of the big benefits is that both sites will be able to use and build on our existing infrastructure,” he said. “Big investments have been made in the lead-up to the SKA site decision. Australia has invested more than $400 million already.”

The new plan to share the SKA will see Australia’s Mid-West hosting two key components of the telescope – a group of dishes equipped with Australian-designed multi-pixel radio cameras and the ‘Aperture Array’ portion, made up of innovative, non-moving antennae designed to collect lower frequency radio waves from the whole sky.

“This part of the SKA will be optimised to survey large portions of the sky quickly, a particular strength of Australian astronomy,” said UWA Professor Lister Staveley-Smith, Deputy Director of ICRAR.

South Africa will host a complementary group of dish-shaped telescopes designed to observe smaller sections of the sky in more detail, following up on regions of interest discovered using the survey portion.

“This model for splitting the SKA closely follows the workings of other observatories around the world; often separate instruments will survey the sky and inform where another telescope should look closer,” Professor Quinn said.

“These global science endeavours will continue to benefit Western Australia and the international scientific community long into the future. The effort Australia and WA has made in infrastructure, legislation and policies will make the Murchison Radio-astronomy Observatory a significant centre for global science for decades to come,” he said.

“As an International centre, we’re eager to continue our work with colleagues in Africa and the rest of the world to build the SKA and use it to explore the Universe in 10,000 times more detail than ever before.”

The SKA is a project for future generations. Completion is planned for 2024.
Witches, vampires and werewolves were all part of the rich imagination of European society in the 16th and 17th centuries. This early modern period was arguably the greatest age of the imagination and with it came ‘imaginary’ diseases and ‘diseases of the imagination’.

Intellectual historian Yasmin Haskell, who holds the Cassamarca Foundation Chair in Latin Humanism, has recently edited and published a book about it: Diseases of the Imagination and Imaginary Diseases in the Early Modern Period. Professor Haskell has brought together social and literary historians from several different European cultures to examine psychosomatic illnesses, deeply-held beliefs that imagination could influence physical events, and scholarly debate over witches, vampires and werewolves.

“My interest was sparked when I was looking at two very long Latin poems written by Jesuits in the 17th century,” Professor Haskell said. “The poems were about chocolate and fishing but they both had lengthy digressions on a plague of hypochondria that was apparently afflicting people who were well educated.

“Hypochondria” was recognised as a real illness then, or rather, ‘hypochondriacal melancholy’, an illness with physical and psychological symptoms which physicians of the time believed arose from disorders of the organs lying ‘beneath the cartilage of the ribs’ (the literal meaning of ‘hypochondria’).

“Both the poets talked about it as a depressive illness from which they had suffered, an illness that could eventually lead to complete derangement.”

Professor Haskell, who is a chief investigator in the ARC Centre of Excellence for the History of Emotions, secured an ARC grant, with Winthrop Professor Sergio Starkstein, from the School of Psychiatry and Clinical Neurosciences, to look at the history of psychosomatic and somatoform illnesses.

“Nowadays, if we think somebody is imagining that they are sick, we say they have hypochondria, but in the early modern period (from about the late 16th century to the early 18th century) hypochondriac illness would have been treated seriously by doctors – with drugs, dietary prescriptions and so on.”

Along with that belief was serious and learned discussion about whether witches really ‘flew to the Sabbath’ and whether the devil could impersonate the dead, perhaps even create the illusion of vampires. Or did such creatures really exist?

“They were all very vexed issues; it was a frightening time,” Professor Haskell said. “It was believed that if you suffered from melancholy (black bile), it allowed demons to enter your body. On the other hand, melancholy was seen in some quarters as a precondition for genius: people who achieved in the arts were often presumed to be suffering from melancholy.

“And even today, some people talk about links between bipolar and artistic genius.”

Professor Haskell said people in the early modern period believed the imagination was so powerful that it could influence others from afar. “They believed you could make somebody sick with the power of your mind. Such effects might even be produced from beyond the grave.

“Today we have our own worries about potential ‘diseases of the imagination’ as a result of online pornography, violent computer games, bombardment with multimedia advertising and the 24-hour news cycle. Are we becoming more distractible, desensitised, depressed … as a result of our sedentary and screen-centred modern lives?” Professor Haskell asked.

“If the views of the early modern physicians and theologians seem strange to us, we should at least give those guys credit for thinking seriously and with considerable sophistication about the mechanisms by which images and ideas can influence us.

“And if you look at the modern-day ‘bibles’ of psychiatry such as the Diagnostic and Statistical Manual of Mental Disorders, published by the American Psychiatric Association, it is difficult not to conclude that we haven’t come so far, at least where conceptual issues are concerned. We find in many cases a sort of checklist for practitioners to help them diagnose mental illnesses: along the lines of, if you have five or six of these beliefs or behaviours, then you have this particular disease.

“Funnily enough, many of the non-pharmacological treatments used by modern psychiatrists and psychologists – from cognitive behaviour therapy through to an emphasis on diet, exercise, and social interactions – have very ancient roots.”

Diseases of the Imagination and Imaginary Diseases in the Early Modern Period is published by Brepols in Belgium.
In the past few millennia we have made the most astonishing and unexpected discoveries about the cosmos and our place within it, explorations that are exhilarating to consider. They remind us that humans have evolved to wonder, that understanding is a joy, that knowledge is prerequisite to survival. I believe our future depends powerfully on how well we understand this cosmos in which we float like a mote of dust in the morning sky – Carl Sagan, astrophysicist and astronomer (1934-1996).

The words of the late Carl Sagan seemed particularly relevant in recent weeks as we celebrated Australia’s success in gaining a large part of the $2 billion international radio telescope project, the Square Kilometre Array, and just a week later watched the ‘transit of Venus’ which will not be seen for another 105 years. Australia’s success in the SKA project should not be under-estimated. It has the potential to inspire a nation, excite future generations of scientists and ignite collaborations.

At an international level, the SKA project – the world’s biggest radio telescope – will ensure Australia’s ability to generate new knowledge of global significance. At a State level, Western Australia will add new cutting edge science to its portfolio of globally competitive resources; and at a university level, UWA will continue to expand its reputation as a world leader in radio astronomy with UWA staff taking a leading role in the International Centre for Radio Astronomy Research – a collaboration between our University and Curtin.

The SKA project will be a magnet for many of the world’s top scientists and researchers in fields such as astronomy, computer science, engineering, geology, environmental management and renewable energy. Many technical and support staff will also find employment and the project will attract business and industry worldwide to WA.

This is science which will extend our knowledge from the beginnings of our universe and at the same time develop technologies and processes which will be of practical benefit to industry, business and the wider community.

The decision also continues Australia’s proud scientific tradition. Whatever other traits have distinguished us, we have been an innovative country rich in, and enriched by, scientific imagination. Innovation and science have advanced our health, our prosperity and our public life … they have made us better at world affairs, and a better nation as a whole.

The SKA will ensure new generations of bright young minds share in the excitement and potential of science in general and astronomy in particular. That enthusiasm was on show last week when students joined the WA Governor and other dignitaries to view the Transit of Venus through a solar telescope at the Gingin Gravity Discovery Centre next to the UWA Gravity Wave observatory, north of Perth.

The next transit is more than a century off. It is impossible to imagine what humankind will know of the Universe by then. But we can be sure that our University, through our affiliations in projects such as the SKA, will have played enormous roles in relaying that knowledge.
Students chose their own topics from within six broad areas: mainstream media, online media, sport, nature, national celebrations and music. Some of them approached their topics as an ‘outsider’ looking into Australian society; others took the perspective of Australians communicating with other Australians within that society; and some looked at how Australians represented themselves on the international stage.

Their research will feed into Professor Forsey’s own research on visualising Australia.

At the beginning of the semester, I asked my overseas students to give me some words which they thought captured the idea of Australia. They came up with kangaroos, desert, bush, surf and suntanned men. The local students had a very different image, but their suburban reality is often lost in the big picture.”

Brad Schroeder, an exchange student from Notre Dame University in Indiana, said the unit had given him a great opportunity to appreciate the vastness of Australian culture.

His research was in online media and he focused on the news site Reddit. “There are pages of news and pictures that are specifically Australian, and I compared these with the general pages,” he said.

“I compared the top stories for 25 days with the top 25 Australian stories and I was surprised at what I found. I expected the Australian content would show the laid back, humorous nature of Australians. But, surprisingly, when Australians are posting stories and images for Australian consumption, the vast majority are quite serious.

“When Australians are posting stories and pictures for the international audience, they tend to revert to stereotype, such as posting a photo of a big spider eating a bird. There was also a comparison of sports with two photos: one showing a soccer player lying on the ground apparently uninjured, another showing an AFL player with his face covered in blood. The caption was: ‘A soccer player pretending he’s injured and an Aussie Rules player pretending he isn’t’.

“So I came to the conclusion that the Australian stereotype was put out there for an international audience but not a domestic one.”

Erica Crooke, a mature-age local student, directed her research on ANZAC Day towards the traditional Australian Rules football match that is played every year on that day.

“I went to the dawn service for the first time but I was a bit disappointed because I couldn’t see anything. The sunrise was very moving though. And I must say that as we were walking towards Kings Park, it felt like going to a football match, with thousands of people all streaming in one direction,” she said.

Erica watched the pre-match telecast in which she said most of the coaches and players seemed to have a military connection. “Somebody in their families had been at ANZAC Cove or Vietnam or were in the Rats of Tobruk.

“But I felt a real conflict and an anxiety that all the media attention on a football match was a bit disrespectful. The next day, an online article in The Drum also suggested this and there were about 100 pages of comments, many of their authors agreeing that they too felt that anxiety.

“It seems to me that the further we travel away from the ANZAC battle, the more we are trying to make footy and war analogous.”

Professor Forsey said he was finding his students’ research fascinating. “Many of them were really excited about getting into research. I feel that hands-on research and inquiry are not just for academics; they are essential skills for professional life in the 21st century.”
Young enthusiastic PhD students are spreading the word about science careers throughout the State.

But what makes UWA’s Travelling Scientist program unique is that these bright 20-something adults talk about their own personal journeys, not just about science and their research.

Jan Dook, Associate Professor in Science Communication, points to feedback from a teacher at a north-west school visited by Travelling Scientist Ryan Kempster. “Ryan had talked to the high school students about himself, how he had some learning difficulties, how he used to fail exams, how he finally made it through high school and university and was now doing his PhD on an aspect of sharks and their development of sensors.

“I was told that two girls immediately changed their courses after Ryan’s visit, to work towards marine science studies. They said that if Ryan could do it, they could do it.

“And that’s what makes this program so powerful,” Professor Dook said.

The Travelling Scientist program was established four years ago through UWA’s SPICE program and the Science Futures Foundation. SPICE is a secondary science teachers’ enrichment program, a partnership between UWA and the State Department of Education. Its curriculum consultants, Bob Fitzpatrick, Jenny Gull and Pauline Chapman, run in-school and regional professional learning workshops aimed at enhancing school teachers’ skills and their understanding of advancements in science and technology.

Professor Dook said the group decided to send PhD students with the consultants when they travelled around the State, so school students would have some exposure to inspiring young scientists while their teachers were enjoying professional development.

“We trialled it in 2009 and 2010 and it has been a huge success,” she said. “I identify PhD students who I think would do a good job, including checking them out through the Three Minute Thesis competition.” Professor Dook is one of the local judges.

“The high school students get to interact with positive role models, connect with current scientific research and engage with scientists as real people working on real problems and issues.

“And our Travelling Scientists themselves absolutely love it. They say is helps them to maintain enthusiasm for their research and they love seeing the students open up to the possibility of studying science and working in science.”

The travelling team this year is Ryan Kempster from the Oceans Institute (who was the UWA finalist in the Three Minute Thesis competition last year); Karina Price and Ellen Fortini, who are both doing medical research through WAIMR; Anna Bradley from Forensic Science; and Tristan Clemons, studying for his PhD in nanotechnology while playing hockey for Australia and hoping for a place on the Olympic team.

They have made six trips to remote and regional secondary schools so far this year, Ellen’s recent trip to the Pilbara was co-funded by Aspire, the UWA program which engages students in schools not usually represented in undergraduate intakes. Meanwhile Anna was in the Kimberley, where she talked with 225 students in one day in Broome.

Ellen used the program’s new biotechnology kit (funded by the Federal Government) to help the students with hands-on activities and experiments. Her research is in medicine and pharmacology.

“I have always been fascinated by how unique every person is, not just in appearance but also in our personalities and the way our bodies work,” Ellen said. “My PhD research involves investigating the way these differences come about in light of the fact that, at the most biological level, that of our DNA, humans are 99.9 per cent identical to each other.

“I am looking at a compartment within cells called Paraspeckles, which are thought to regulate the expression of different bits of DNA at different times. Loss of this regulation can result in disease, making it vital that we learn more about how this regulation is achieved.”

Ellen is making another trip, armed with the biotechnology kit, later this month.
Seven young UWA rowers are representing Australia over the next few weeks.

But they are discovering, along with other elite athletes, that funding can be even harder to win than the race.

Arts student Thea Adamson wrote to many people and organisations, on behalf of her teammates in the Under-23 World Rowing Championships, asking for financial help.

Senior Deputy Vice-Chancellor Professor Bill Louden has awarded Thea and her four Under-23 teammates $500 each to help with their $6,750 travel costs.

Thea is competing with her schoolfriend and long-term rowing partner Hannah Jansen, who is studying Sport Science. The two rowed together in the eight that won the Head of the River for Perth College in 2008. They have continued their rowing while at UWA.

Timothy Widdicombe (Engineering/Commerce) and Thomas Meares (Science) join the young women in the Under-23 squad, which is leaving on 23 June to take part in the Henley Royal Regatta, then to compete in the Under-23 World Rowing Championships in Lithuania in July. Tim and Tom are in a lightweight four and Thea and Hannah row as a lightweight double.

Thea and Hannah are also part of a quad team with fellow UWA student Maia Simmonds (Law/Science). They will compete in the Senior A Non-Olympic World Rowing Championships in Bulgaria in August. Maia, Thea, Hannah, Tom and Tim have all benefited from the Vice-Chancellor’s grant.

Perry Ward (Science) is rowing in the men’s lightweight eight and David Watts (Commerce) has been selected in the men’s eight for the Under-23 championships in Bulgaria.

Thea said she had worked as a rowing coach for Guildford Grammar School over the summer to try to save money for the trip, but training twice a day every day and keeping up with her studies meant she could not keep up a part-time job.

“It’s getting harder and harder to do any fund-raising too,” said Hannah. “You have to show how any fund-raising effort will benefit your club and often you have to show how it will benefit the community before you can even sell sausages outside the local hardware.”

She and Thea said if they could not find any more financial help, they would turn to their parents again.

“My parents have spent close to $20,000 on my rowing trips and it makes me feel sick to think of it,” Hannah said.

Thea said that the students had to pay their own way for the Under-23 championships in Lithuania but as members of the Senior A squad in Bulgaria they would normally have their fares paid for them. “But this year, because of the Olympics and all the money going in that direction, we’re not sure if that’s going to happen.”

Fellow Western Australian athlete Tommaso D’Orsogna, an Olympic swimmer, was quoted recently in The West Australian newspaper, saying that, without sponsors, the grants from the Australian Institute of Sport and Swimming Australia were not enough to live on.

He said he was lucky to be supported by his parents but many swimmers were not able to afford to continue their sporting careers.
All the winners of the 2012 UWA Excellence in Teaching Awards are nominated for national recognition.

Along with the winners announced in UWAnews last month, the International Centre and Winthrop Professors Cheryl Praeger and Richard Weller have also been nominated by UWA for 2012 Australian Awards for University Teaching (AAUT) citations for outstanding contributions to student learning.

The International Centre, led by director Kelly Smith, is nominated for its excellent and international award-winning service for more than 25 years.

It has provided opportunities for both overseas and Australian students to develop international perspectives and deep cultural competence.

This award recognises the efforts of a large number of people over those years.

The Centre’s staff recruits, admits, advises and supports thousands of students each year from countries all over the world. In 1988, the equivalent of 4.5 full time staff looked after just 550 students, principally from Singapore and Malaysia. Today there are 20 staff looking after the needs of more than 5,000 students from more than 80 countries.

An early initiative was the WA Universities Foundation Program, developed with the State Government, to address particular needs of international students preparing for university entrance.

Sponsored international students, through AusAID and other organisations, are managed by the staff, who often go out of their way, out of hours, to welcome and support them.

The International Centre also has responsibility for administering the Student Exchange program, which last year sent 357 students out across the world on exchange and looked after incoming students in return.

Mr Smith (on behalf of the International Centre) and his father, Professor Roger Smith, from the Business School, both won awards at Teaching and Learning Month. Their story is on the next page.

Professor Weller, Director of the Australian Urban Design Research Centre, has won multiple awards for his innovative teaching in the Faculty of Architecture, Landscape and Visual Arts, and for his creative designs for sites around the world, including the US and Europe.

His nomination is for sustained commitment to inspiring and enabling students to engage creatively and critically with complex design problems.

Professor Praeger, from the Faculty of Engineering, Computing and Mathematics, is also a much decorated supervisor and highly cited researcher. She is nominated for developing the gold standard in mathematics research supervision and more than 30 years of nurturing a research community where undergraduate and postgraduate mathematics research flourishes.

Paul Lloyd, from the Business School Undergraduate Student Centre, is nominated for sustained commitment to personalised advising of undergraduate and postgraduate students that has enhanced the overall student experience.

Professor Jane Heyworth is Sub-Dean (Health Sciences) in the faculty of Medicine Dentistry and Health Sciences and a Professor of Population Health. She has been nominated for inspiring students to be leaders in public health through stimulating curricula and engagement with students throughout their journey.

Assistant Professor Ambelin Kwaymullina, from the Faculty of Law, is nominated for excellence in teaching and innovative curriculum development in the area of indigenous peoples and the law.

Malcolm Fialho is a senior diversity officer in Equity and Diversity (Human Resources). His nomination is for leadership and innovation in implementing a University-wide Cultural Competence program to engage, sustain and deepen an action-oriented program around cultural diversity, racism and community harmony.

Associate Professor Paul McGurgan, from the Faculty of Medicine, Dentistry and Health Sciences, and Winthrop Professor Phil Hancock, from the Business School, are both nominated for AAUT Awards for Teaching Excellence. They will be featured in the next issue of UWAnews.
Father and son Roger and Kelly Smith both started work at UWA in 1995.

They are both experts in international management and champions of education and hard work.

This combination saw them both applauded at UWA’s celebration of Teaching and Learning Month when Kelly accepted an award on behalf of his staff at the International Centre and Roger was rewarded for his teaching in the Business School.

“I didn’t see Kelly following in my footsteps, but in many ways he has,” said Roger, a Professor and Senior Honorary Research Fellow, whose career, prior to 1995, took him and his family to many parts of Asia, working as a management consultant. “Kelly shares my motivation for improving our own education as well as helping others towards this end. We are both hard workers and handy at both research and administrative work. He has taught English in Japan and in Australia, so I guess his teaching skills are pretty good too!”

At last month’s event, Roger received an award for Excellence in Teaching which follows his Citation in 2008 for Outstanding Contributions to Student Learning. Both awards related to his teaching and administration of International Management and Management and Consulting units in the Graduate School of Management and the Business School and offshore in Singapore, Jakarta and Manila.

Kelly has been the Director of the International Centre since 2009 and was Associate Director from 2006. He is quick to point out that the Citation for Outstanding Contributions to Student Learning is a team award.

“There is no way I can claim credit for this award,” he said. “It is a testament to all the staff who have contributed over the years, including those who have left. My part has been as much a member of the team as a leader and what I believe about leadership now comes as much from being led by the current and past management team and being part of that team.

“I do not believe in micro managing because, for the most part, the people doing the job know how to do it better than I do. However, I do believe in making sure that everyone understands what the expectations are. And the number one expectation for the International Centre is that we are here for those international students who choose to study here and for those Australian students who choose to study abroad.”

The citation reads: “For over 25 years the International Centre has provided opportunities for both overseas and Australian students to develop international perspectives and deep cultural competence.”

Kelly said the two strongest things he learnt from his father were the importance of education and hard work and that if you put those together you could achieve anything.

“What he also gave me was an appreciation of cultural differences, given that much of his work has been international. From this I gained an appreciation of the importance of facilitating meaningful cultural learning experiences for people and thus a passion for helping students access those opportunities,” he said.

Kelly’s first job at UWA, in 1995, was teaching in the Centre for English Language Teaching. This came after six years in Japan where he also taught English.

“My time at CELT (and also the time teaching in Japan) gave me a strong appreciation of the necessity to understand students’ needs in order to ensure they learn effectively.

“During that time I also undertook an MBA at UWA in which I specialised in international management. At that time my dad was also teaching in the MBA program and I took a few of his classes as he was the international management specialist at the time. I think he was a great teacher but probably a bit harder on me than on others just to make sure there was no perceived conflict of interest!”

He started in the International Centre in 1999 just before finishing his MBA and left in 2001 to work for Study Group. It is a global private education provider and also teaches UWA’s Foundation Program so he remained strongly engaged with UWA and the International Centre, before returning five years later.

Roger is now retired but teaches a few classes occasionally, including some for Chinese LNG managers who take part in the Australian Centre for Natural Gas management courses, a joint venture between UWA and Curtin University.
Keeping up standards

UWA recently hosted a meeting for the committee responsible for representing Australia’s interests in the development of a new ISO (International Standards Organisation) Standard for Asset Management.

Why is this work important? Many will have heard of the ISO 9001 Quality Management Standard and the ISO 14001 Environmental Management Standard. The new ISO 55001 Asset Management Standard, due to be issued in March 2014, will sit alongside these existing standards to provide organisations, governments and regulators a set of requirements for managing assets. Given the asset-intensive nature of our economy, this will have far-reaching implications, especially for the regulated sectors.

The Australian committee includes representatives of many of the main asset-owning sector bodies including defence, roads, mining, electricity, water, and local government, as well as regulators, professional groups and government bodies. It is chaired by Professor Melinda Hodkiewicz from the Faculty of Engineering, Computing and Mathematics.

“When the group started on this work back in 2010 each sector had its own framework and language for asset management,” she said. “The process of developing the standard has resulted in a harmonisation of concepts within the Australian community, and this cohesion has allowed the group to play an influential role at an international level.

“Seven of the Australian committee have roles on the ISO working groups and as such have the opportunity to influence our international colleagues from more than 20 participating countries.

“ISO meetings work by a process of developing consensus. This has been more of a challenge for some nationalities than others, though I am pleased to say that Australians are well-regarded as outcomes-focused and seen as thought leaders in this space.

“While it has been a challenge for the Australian community to resolve our own internal technical differences, once we have agreed on our position, there has been good discipline across the committee. In this process we have all learned some useful debating and persuasion skills.”

UWA is the nominating organisation for development of the Standard in Australia and was responsible for the original business case and supporting our national standards body in the selection of committee members.

It’s about time

Perhaps physicist and ARC Australian Laureate Fellow Michael Tobar should have been a comedian. He has a perfect sense of timing.

Winthrop Professor Tobar, his group at UWA and his international collaborators are world leaders in precision measurement technology, including measuring time to improve international clock technology.

His group in the School of Physics, the Frequency Standards and Metrology Research Group, is applying precision measurement technology to test Einstein’s Equivalence Principle. This encompasses the development of some of the world’s best clocks and devices, including the ultra-precise sapphire clock and the interferometer noise measurement system.

But their work is not restricted to this planet. Professor Tobar is doing research in space to test the fundamental rules of physics.

In a public lecture, It’s About Time, presented next month by UWA’s Institute of Advanced Studies and Scitech, Professor Tobar will discuss his research with the European Space Agency’s Atomic Clock Ensemble in Space mission on board the international space station. This project will send the first laser-cooled atomic clock into space and will usher in a new era of precision timing in space.

The Atomic Clock Ensemble in Space has the potential to revolutionise global positioning systems (GPS), navigation, and precision tests of physics such as Einstein’s theories of relativity and fundamental constants.

It’s About Time is a free public lecture but please reserve a seat at trybooking.com/24149

The lecture is at the Lotterywest Science Theatre at Scitech, West Perth, on 21 June, at 6pm.

Michael Tobar
The heat is on for underground power

Exploratory drilling on the Crawley campus in 2009 confirmed good reserves of hot water below the surface

Geothermal energy is more than just a great alternative energy source. It is also streets ahead in efficiency and cost-effectiveness.

As well as generating electricity, it can provide ‘energy use displacement’ which is a much more efficient and less wasteful way of providing power, through ‘direct heat’.

Winthrop Professor Klaus Regenauer-Lieb, the founder of the Western Australian Geothermal Centre of Excellence (WAGCOE), explains: “Energy use displacement refers to replacing conventional electricity use by direct heat use. To explain, we currently throw away four to five times the heat to convert heat to electricity in a power station. We then use the electricity to run an air-conditioning system or to desalinate sea water. It is much more efficient to avoid the use of electricity and use the heat directly to evaporate water or run our air-conditioners.”

Geothermal energy from hot sedimentary aquifers (HSA) is recognised by the International Energy Agency as among the most cost-effective low emissions energy source. Over the past three years, the WA State Government has invested in the development of HAS through WAGCOE.

WA’s unique deep hot sedimentary coastal aquifers underpin research at the Centre, which is a collaboration between UWA, CSIRO and Curtin University. They are perfect for promoting and demonstrating projects for this form of clean energy.

Professor Regenauer-Lieb will present the Centre’s research at UWA’s annual George Seddon Lecture on Wednesday 27 June.

He will talk about a Federally-funded project to drill wells into the aquifer underneath the Australian Resource Research Centre, at Technology Park in Bentley, to drive a new geothermal cooling technology.

These wells will be one of the few HAS geothermal research facilities in the world operating under live conditions. The mission is to make geothermal energy a pillar in the renewable energy mix by 2020 through a ‘geothermal city’ initiative providing geothermal zero-emission desalinated water, air-conditioners and power to modern cities.

Perth has been elected as one of the world’s 10 leading geothermal cities, with the aim of being the first city in the world to be geothermally cooled.

The George Seddon Lecture is presented by the UWA Friends of the Grounds and the Institute of Advanced Studies. It is a free public lecture but please RSVP to ias@uwa.edu.au by 22 June.

The lecture is in the Ross Lecture Theatre in the Physics building, starting at 6pm.

Ethical leadership and the GFC

When the Global Financial Crisis hit Australia in 2008, ethics and leadership were the two attributes that were needed to navigate out of the mess.

Gail Kelly, CEO and Managing Director of Westpac Group, employed both in what was a landmark year for the bank, which is one of the 20 biggest banks in the world.

That year, she led Westpac through its merger with St George Bank, the biggest merger in Australian financial services history. She then navigated through the turbulence of the GFC and the subsequent and continuing structural shifts in world banking and financial markets.

Ms Kelly has been chosen to deliver this year’s Vincent Fairfax Oration. It is part of a program funded by the Vincent Fairfax Ethics in Leadership Foundation. It was established as a way of engaging leaders from different sectors of society in discussion, debate and ongoing conversations about ethics and leadership.

UWA’s Institute of Advanced Studies, together with The University of Melbourne’s Centre for Ethical Leadership, presents the oration at the Octagon Theatre at 6pm on Monday 25 June.

It is a free public lecture but booking is essential, through the Octagon box office on 6488 2440, between 12.15pm and 4pm, Monday to Friday.
Students come to grips with patients

Volunteer patients are helping medical students practise their communication and examination skills.

About 200 community members are regularly working with medical students in their clinical practice sessions, role playing sore knees, shortness of breath and a whole range of complaints that are seen every day in Perth medical practices.

Five years ago, medical students in the pre-clinical years (one to three) only had each other to practise on. Then Assistant Professor Helena Iredell who coordinates the Foundations of Clinical Practice unit through the School of Population Health, along with Administrative Officer Mrs Jane James, advertised in local newspapers for ‘simulated patients’.

“It has made such a difference to the students’ learning, having people of all ages, rather than just their peers,” Professor Iredell said. “Relying on other students didn’t always work and there wasn’t the diversity of patients.”

The unit provides the only chance for medical students in their pre-clinical years to practise their patient skills, which include taking patient histories and explaining things to patients, as well as examining them.

“The students found it was not as easy as they thought to get a good history, but after a few practical sessions each semester, they say they feel much more comfortable. It’s so much better to practise on a variety of patients than just talk about it.”

“Other staff are saying that their skills are better when they enter their clinical years (years four to six) than when they were only practising on each other.”

Professor Iredell and Mrs James organise the volunteers, along with the support of the Foundations of Clinical Practice administrative team, and patients are recruited to assist up to 500 students each semester. The volunteers are also used for the students’ clinical skills assessments.

“Communication skills are so important for medical practitioners and, with the help of the volunteers, we can concentrate on these skills from the beginning of the course and provide the students with extra help if they need it,” Professor Iredell said.

Most of the volunteers are older retired people. “Working with older people is important because doctors in the community deal a lot with older people who have chronic conditions. But we welcome younger people as we need to address medical conditions across all age groups.” Professor Iredell said.

If you would like to know more about this program please contact Mrs James at jane.james@uwa.edu.au or 6488 7374.
University staff have been actively fighting cancer.

Last month, more than 300 people attended UWA’s Biggest Morning Tea at the University Club. And others took part in the HBFRun for a Reason a few days later.

Natali Morgan from Public Affairs was the 9th highest individual fundraiser in the run that attracted more than 20,000 participants, running, jogging or walking a 14 kilometre course through the city.

She completed the course in one hour 15 minutes and raised $2,630, much of it contributed by her colleagues. The Run made a record $740,000, raised by individuals and teams for a variety of causes.

For family reasons Natali chose to support the Leukaemia Foundation of Australia/WA.

The Biggest Morning Tea raised more than $3,200 for the Cancer Council, with some donations still trickling in. Two footballers from the West Coast Eagles chatted about health, wellbeing and exercise and happily joined in some cake decorating.

Players Tom Swift and Mitch Brown helped University Club executive chef Costa Simatos judge the cupcake decorating competition.

Cancer Council Biggest Morning Teas are held all over Australia in the last week of May. UWA’s event was organised by Assistant Professor Cindi Dunje from the Centre for Exploration Targeting and Lindy Brophy from Public Affairs.

Gary Ellis, general manager of the University Club, generously sponsored the morning tea, providing tea, coffee, cakes and biscuits, staff and the cupcake decorating ingredients and utensils.

IDAHO was celebrated quietly at UWA last month.

It is the International Day Against Homophobia and Transphobia. Staff and students with diverse sexualities and genders are well supported at UWA. The Senior Deputy Vice-Chancellor, Professor Bill Louden, acknowledged the day, in his role as executive champion of the University’s initiatives in this area.

“One more than a decade ago, UWA was among the first Australian universities to develop and implement initiatives, including Rainbow and the ALLEY Network, to ensure that the campus was a welcoming, safe and inclusive place for all of our staff, students and visitors irrespective of their sexual orientation or gender identity,” Professor Louden said.

“The past decade has also seen the introduction of a range of practical initiatives in this area including the adoption of a broad definition of ‘family’ in the Enterprise Agreements, recognition of Trans and Intersex status on UWA forms and the formation of a lesbian, gay, bisexual, transgender and intersex (LGBTI) staff network.

“We have also recently developed a Diverse Sexualities and Gender (DSG) Policy that supports these initiatives and explicitly affirms the University’s aspirations in this area.

During IDAHO, UWA was awarded seventh place in the annual Australian Workplace Equality Index of the Top 10 Employers of LGBTI Staff in Australia. The Australian Workplace Equality Index evaluates and benchmarks LGBTI inclusiveness in Australian workplaces. This is the second year that these Awards have been offered and that UWA has been recognised.

This achievement will be celebrated soon at UWA and the DSG policy formally launched. In the meantime, you can see the policy at: universitypolicies.uwa.edu.au

The University of Western Australia
Moerlina is an independent primary school providing a nurturing educational environment for pre-kindergarten (three year olds) to Year 7. Centrally located in Mount Claremont, Moerlina is close to public transport and nearby to a shuttle bus servicing the QEII/UWA precinct.

A partner school to UWA’s Faculty of Education, Moerlina provides an academic program of excellence. Moerlina’s point of difference is providing a child-centred, inquiry style of teaching and learning. Our programs foster curiosity, exploration and critical thinking skills to enable our students to emerge resourceful and independent thinkers. Our goal is to support the development of creative and higher order thinking skills – skills for success.

“Moerlina is an ideal learning environment and an excellent partnership school for our pre-service teachers” (Professor Val Faulkner, UWA Faculty of Education)

Many schools espouse that they foster learning to suit individual children’s needs and strengths, but Moerlina does. It is one of the few schools that understand how to both support a child who needs nurturing and encouragement to learn; extend those that learn in a fluid effortless way and need extension, and all the time drawing children together to work as one cohesive class.

(Sue Beurteaux, Director Gymsworks Occupational Therapy)

Discover how Moerlina brings education alive by contacting our Registrar Kerryn Robbins on (08) 9384 5894 or admin@moerlina.wa.edu.au or visiting www.moerlina.wa.edu.au

Open Day 9am-12 noon Thursday 21st June
Exploiting Induced Pluripotent Stem Cells and Liver Progenitor Cells—$250,500 (2012-14)

**WINTRHOP PROFESSOR PAUL FLATAU, ASSOCIATE PROFESSOR PAUL CROMPTON, DR NAZIM KHAN, MATHEMATICS AND STATISTICS (School of), UWA Business School: ‘Time Series Modelling and Forecasting of the WA Prisoner Population’—$39,760 (2012)**

**NEW STAFF**

19 April to 18 May 2012

**Fay Brace, Administrative Assistant, Facilities Management**

**Peter Dalziel, Printing Machinist, UniPrint**

**Joanne Deverell, Administrative Assistant, Primary, Aboriginal and Rural Health Care**

**Min Ding, Senior Research Officer, School of Surgery**

**Sean Doyle, Research Officer, Psychiatry and Clinical Neurosciences**

**Andrew Hoddinott, Client Services Manager, UniPrint**

**Isabella Hofmann, Assistant Professor, UWA Business School**

**Sean Doyle, Research Officer, Psychiatry and Clinical Neurosciences**

**Isabella Hofmann, Assistant Professor, UWA Business School**

**Kristy Indich, Administrative Assistant, School of Indigenous Studies**

**Satoko Ishigami, Technician (Soils), Centre for Offshore Foundation Systems**

**Katarina Nolan, Administrative Assistant, Dentistry**

**John Langan, Research Officer, Engineering, Computing and Mathematics**

**Talitha Lowndes, Graduate Research Assistant, Psychology**

**Dr Luciano Martelotto, Research Associate, UWA Centre for Medical Research**

**Phillip Maslen, Graduate Research Assistant, Pathology and Laboratory Medicine**

**Katarina Nolan, Apprentice (Dental Technician), Oral Health Centre of WA**

**Dr Jeneva Ohan, Associate Professor, Psychology**

**Dr Kamalavalli Pugazhenth, Graduate Research Assistant, Women’s and Infants Health**

**Jemma Seery, Receptionist, Oral Health Centre of WA**

**Steven Smith, Technical Officer, Facilities Management – Planning and Design**

**Pranav Sodhi, Receptionist, Oral Health Centre of WA**

**Luisa Stade, Executive Assistant, Primary, Aboriginal and Rural Health Care**

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**APARTMENT:** A charming, fully renovated two-bedroom apartment in Mt Lawley (Guildford Road) for sale by the owner. Floorboards, dishwasher, a small balcony and breath-taking views of the CBD (fifth floor). Bus stop in front of the building, 10 minutes away from Beaufort street; conveniently located shopping, and twenty minutes away from the University via the Graham Farmer freeway. The apartment is currently fully furnished (excellent washer, dishwasher, dryer, fridge and freezer and Sony TV, a fully appointed kitchen and tasteful quality furniture in plain wood and earthy colours). The entire furniture package could be included in the price of the apartment, leaving absolutely nothing to do but move in. An excellent investment, hide-away or dwelling for students. Price $370K. Please contact daniela.kambaskovic-sawers@uwa.edu.au

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By Associate Professors Christine Howitt and Robert Faulkner

Ever stopped to consider the most significant event or time in your education?

Was it those intense discussions with your supervisor about what all your data meant, followed by writing up the many drafts of your PhD thesis? Was it an inspiring undergraduate lecture? Or was it cramming for hours on end before your school exams, so that you could get into the university course of your choice?

Would anyone even consider a time at primary school, or even kindergarten, as the most significant and important time for their education? Well, kindergarten is closer to the truth than you think.

The first five years of life are crucial in shaping a child’s ability to learn and to think creatively. From birth onwards, children explore their world in an attempt to make sense of the things around them. What children learn by age five will often predict the success, or otherwise, of their lifelong education.

Recent research into the capacity of the brain to develop, change, learn and regulate emotion shows that the early years provide the greatest window of opportunity for learning we will ever have. Other research indicates that children who are unable to capitalise on this critical stage are unlikely to catch up – ever.

Children’s vocabularies at age three are strong predictors of their literacy at age 10. It’s not hard to make the connection between the quality of kindergarten or pre-school education and care and outcomes in senior schooling, higher education and the workforce.

How many of us can remember positive learning experiences in the kindergarten, or those rich and stimulating home environments that your parents provided when you were three or four years old? If you are reading this article, you probably had them.

Even more remarkably, the 2000 Nobel economics laureate, James Heckman, has illustrated how investment in early education provides economic returns that exceed most projects normally defined as economic development strategies, not to mention the long term social, emotional and life opportunity returns. Returns on investment for early childhood development programs have been calculated to be at least 8:1, compared with 3:1 for primary and secondary education.

Children develop and learn through their relationships with others, emphasising the importance of young children’s relationships with adults and of secure attachment as the foundation of their learning.

The quality of a child’s early environment and the availability of appropriate experiences and relationships at the right stages of development determine how a child will think.

It is important to focus on the early childhood stage of development to assist that learning, especially in situations of child poverty, ill health or special need. Timely early childhood interventions are not a luxury but critically foundational to long-term intellectual, physical, psychological, social and emotional functioning. The importance of the early years cannot be overestimated.

And if you remain unconvinced, put this pragmatic hypothesis from Fulghum (1998) to the test.

“Most of what I really need to know about how to live and what to do and how to be I learned in kindergarten.

These are the things I learned:

• Share everything;
• Play fair;
• Don’t hit people;
• Put things back where you found them;
• Clean up your own mess;
• Don’t take things that aren’t yours;
• Say you’re sorry when you hurt somebody;
• Wash your hands before you eat;
• Flush the toilet;
• Live a balanced life – learn some and think some and draw and paint and sing and dance and play and work every day;
• Take a nap every afternoon;
• When you go out into the world, watch out for traffic, hold hands and stick together;
• Be aware of wonder.”