Science inspires Indigenous dance

By Lindy Brophy

Marine science and anthropology research are being redefined into dance movements, artistic lighting and inspired set designs.

The work of ocean scientists and the treasures of the Berndt Museum are aiding the inspiration behind a contemporary dance production on campus.

Ochre Contemporary Dance Company, a new West Australian Aboriginal contemporary dance company, has set up residence in the old Masonic Hall on Broadway, part of UWA's Cultural Precinct.

The company's mission is to provide a platform to promote and sustain Aboriginal culture, while providing creative pathways for Aboriginal and non-Aboriginal dance artists. “And we are making use of the incredible resource that is the University, right outside our back door,” said Ochre’s Founding Director Louise Howden-Smith.

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The company is working on its second major production *Dreamtide* based on stories drawn from the ocean. “Ochre approached researchers at the Oceans Institute for their input, to engage our choreographers and designers to reflect the science of the ocean in their work,” Ms Howden-Smith said. “The Institute staff responded with great interest which drew us into further discussion and the sharing of their unique photos and stories.”

Professor Carlos Duarte, Director of the Oceans Institute (OI), and research fellow in marine science and climate change, Dr Timothy Langlois, are among OI staff who have contributed to the new composition.

Kelly Rowe, an assistant curator at the Berndt Museum of Anthropology, has also been involved, choosing artefacts and artworks to share with the creative staff for inspiration.

“Having access to these resources through the University departments has allowed our artists access to a broad range of knowledge, giving greater depth to their creative process,” Ms Howden-Smith said.

“Our brief was very broad: the impact and the importance of the ocean in creation, the sea and sea creatures, the human element and inspiring stories which bring to life our great landscape,” Ms Howden-Smith said. “As a contemporary company we respectfully seek advice from our Elders regarding steps and motifs reflected in our work.”

Ms Howden-Smith, a former executive director of the West Australian Ballet for more than 11 years, has been working for several years on developing this company.

“We employ Indigenous and non-Indigenous professionals: dancers, artists and designers. The company is a platform for reconciliation and offers pathways for a career in dance, the sharing of culture and greater understanding between all employees and those who see our performances.”

There are 10 dancers currently contracted for *Dreamtide*: some are graduates from the West Australian Academy of Performing Arts (WAAPA), and others from the National Aboriginal Islander Skills Development Association (NAISDA) and the Aboriginal Centre for Performing Arts (ACPWA), both training schools on the east coast specifically for Indigenous dancers.

Assisting Ms Howden-Smith are two WAAPA Arts Management graduates, Emma Cahill (Manager, Staff and Development) and Louise Leadbitter (Marketing and Administration Officer).

“We are still a fledgling company, but we are very quickly developing a place in the dance landscape within Australia,” Ms Howden-Smith said. “With the investment made by all our sponsors, particularly principal sponsor Iluka Resources, and with increasing funding from the Department for Culture and the Arts WA, LotteryWest, the Australia Council and the Department of Regional Development, I hope we will cement our place as Company in Residence of UWA’s Cultural Precinct.”

“We will continue to make the most of the resources of the University, hoping for future collaborations with the School of Indigenous Studies, Sport Science, Exercise and Health, and Architecture, Landscape and Visual Art.”

*Dreamtide* will be performed at the Studio Underground in the State Theatre Centre of WA from the 17-19th October. Tickets are available through Ticketek at www.ticketek.com.au.

Winthrop Professor Ted Snell, Director of the Cultural Precinct, said he was delighted to have Ochre as the precinct’s resident company, bringing life to the old Masonic Hall.

“Their presence, and the ARTLAAB gallery (at street level) for students from ALVA, have transformed the venue into Masonic Contemporary, a hub for creative expression on campus,” he said.

“Over time it will become an important showcase for the work of staff, students and the community and provide a showcase of their activities for local audiences.”
Discoveries by UWA archaeologists are helping the people of the Philippines to better understand their distant past.

“The tropical conditions in the Philippines, which are not conducive to preservation of archaeological remains, have meant that there have not been many finds of great antiquity,” said Associate Professor Martin Porr.

“Of course there has been good work done, and the University of the Philippines is presently expanding its research and facilities with funding from the US. They are a great partner for us in our current project,” he said.

“The Philippines is definitely an exciting country in southeast Asia to work in, because it has not seen as much archaeological research as Indonesia, Thailand or Malaysia.”

Professor Porr and his colleagues from UWA’s Centre for Rock Art Research and Management, the ANU, and the University of the Philippines have been working on the island of Mindoro since 2010.

They have identified, for the first time, prehistoric occupation sites which form the basis for future collaborative work to enhance knowledge about the earliest settlement history of modern humans in the region.

“Our colleagues have already discovered remains of the oldest modern human on an Asian island,” he said. “Those remains are 10,000 years older than any human remains in Australia.

“This finding clearly demonstrated the necessity of more fieldwork in the Philippines and southeast Asia generally.”

A paper on Professor Porr and his colleagues’ findings so far, in the *Journal of Field Archaeology*, is the first article on the Philippines to be published in this major journal.

“Conditions for preservation are not good in the Philippines because the hot, wet climate means there is a lot of bio-activity. The ground is continually re-worked by bio-organisms. And the islands are in a very geologically unstable region, so a lot of earthquake activity also makes it difficult to find preserved remains,” he said.

“We have been working on caves and rock shelters, but the water dissolves the limestone caves and, just like everywhere else in the world, the prehistoric cave dwellers would have chosen to live at the mouth of a cave, where there is light and fresh air, and this is the part of a cave that collapses in an earthquake.”

One of the team’s most exciting finds was a shell midden which had layers preserved over more than 10,000 years.

“We found mollusc shells from a mangrove swamp, then, above them, bigger shells from a deep water environment, indicating a rising of water levels. People were using the same site, but it was in a completely different environment.

“It might seem obvious, but we had to work hard to find a site with this sort of sequence,” Professor Porr said. “Even so, there was a layer of big rocks in the middle, indicating an earthquake along the way.

“Finding the sequence that connects the site to environmental change, dating from more than 10,000 years ago, almost to the present time, is very exciting.”

The research has been funded with a UWA Research Development Grant and funding from the University of the Philippines and the National Geographic Society.

“We are in for a long haul in the Philippines, so we are applying for an ARC Discovery grant to take us into the future,” Professor Porr said.

He has been taking undergraduate students on field trips to Mindoro and the discoveries have so far been analysed by colleagues in Manila. If the group is successful with its Discovery grant, he hopes to send graduate students to the Philippines to work on the collection as well.
In 1960 there were three billion people on the planet. Now, there are over seven billion. And in 2050, it is expected there will nine billion of us.

So far, food production has kept pace – and here at UWA we are working hard to ensure that it will continue to do so.

Our University is committed to advancing agricultural teaching and research through UWA Institute of Agriculture and to meeting the challenges of climate change and the management of greenhouse gas emissions. Other issues include preserving ecosystems and biodiversity, and maintaining global security.

On Friday (September 6), the community will be able to see some of the advances the University is making towards clean, green and ethical farming at the UWA Future Farm 2050 Open Day at the University’s farm, Ridgefield near Pingelly.

The annual showcase of rural science research at the University’s 1600-hectare grainbelt property 158km south-east of Perth aims to help growers and livestock producers develop innovative strategies to adapt to changing conditions and increasingly sophisticated global food markets.

The Open Day also aims to encourage more young people to consider UWA pathways to studying agricultural science as a future career for the benefit of local farming communities and to help keep Australia at the forefront of developing new cutting-edge knowledge and technologies for domestic and international agriculture.

UWA Future Farm 2050 is a large-scale laboratory for advanced research into farming systems by scientists from WA’s leading university and its collaborators.

Growers and livestock producers will be able to discover UWA Future Farm’s vision for world-class production systems, discuss the latest advances in farm research and hear from leading scientific experts about best-practice techniques to further develop agricultural food production for current and future markets.

The farm’s overall objective is to use advanced science and technology to help farmers develop production in financially profitable ways that are ethical and healthy, and produce enough food worldwide for current and future generations.

As part of UWA Future Farm 2050’s commitment to community education, 40 high-achieving Year Nine students from Applecross Senior High School recently visited the farm on a study tour and about 60 Year Eight Science Academic Extension Program students from John Curtin Senior High School in Fremantle and students from Ardross Primary School visited in July.

On Friday, as a UWA Gives Back event for the Centenary Celebrations, I will welcome about 80 students from schools at Brookton, Beverley Narrogin and Pingelly to the Open Day.

If you’re interested, here is a link to the program: ioa.uwa.edu.au/future-farm-2050/news-and-events/open-day-2013

Paul Johnson
Vice-Chancellor
Helping the mentally ill to physical wellbeing

People with severe mental illness are doubly disadvantaged, with much higher rates than normal of physical health problems to add to their burdens.

Public health interventions seem to be having little impact on poor physical health in this group.

The second wave of a study designed to overcome the barriers to improving physical health in people with severe mental illness is being led by Research Professor Vera Morgan from the School of Psychiatry and Clinical Neurosciences.

This NHMRC-funded study will follow up more than 600 Western Australians with a psychotic illness who were first interviewed as part of the 2010 National Survey of High Impact Psychosis (SHIP) funded by the Australian Government Department of Health and Ageing, and the 2012 North Metro SHIP, funded by the WA Department of Health and the Mental Health Commission.

“We know from the SHIP survey that people with severe mental illness have high rates of cardiometabolic disease, which includes heart disease, diabetes, and high blood pressure,” Professor Morgan said. “They also have a reduced life-expectancy, compared to the general population.”

“Our primary objective is to understand how we can improve physical health in these people who are already burdened by the severe symptoms of their mental illness and the multiple side effects of medication used to treat those symptoms.”

But public intervention campaigns have had little impact on the lifestyle risk factors for cardiometabolic disease (for example, obesity, smoking, substance abuse, sedentary behaviour and poor nutrition) in people with severe mental illness.

Professor Morgan said the study’s objective was to fill the knowledge gap on how to modify the risks for physical disease in people with severe mental illness.

“We will interview participants and do blood tests to get accurate information on current health status. We will know if their health status has changed since their previous assessment, and we will examine what the predictors are of any change that we find,” she said.

“The risk factors we will be looking at include body mass index, smoking, alcohol use, nutrition and physical activity. We know from the SHIP survey that, in people with severe mental illness, these risk factors are vastly in excess of what we find in the general population.”

Professor Morgan said they would also look at medication use, as medication needed by people with severe mental illness often caused weight gain.

In addition, the study will examine what the impediments are to the uptake of interventions for cardiometabolic disorder in people with severe mental illness.

“Whatever the reason, the public health messages about smoking, drinking, exercise and so on, are not getting through,” Professor Morgan said.

She and her colleagues have already had good feedback from participants in the first wave, who were pleased to have their problems heard.

“The questions we ask them actually inform them of what’s available, which they may not know.”

Professor Morgan said she was delighted that the current NHMRC study was bringing together the same four UWA colleagues who were involved in the first and second national psychosis surveys (Assen Jablensky, Anna Waterreus, Jenny Griffith and herself). “It’s a wonderful team and we work really well – and really hard – together,” she said.

Key staff from South and North Metropolitan Mental Health Services are part of the research team.

“We argue that targeted interventions embedded within mental health service delivery are essential. The research will help shape a clinical service model targeting physical health within mental health services,” she said. “It will also address health inequities for people with severe mental illness.”
These are the people who patiently deal with our computer problems every day.

We know they do a great job – and now the rest of the country knows too.

itSMF (Service Management Forum) Australia has announced UWA's IT Service Desk as the winner of the 2013 Service Desk Team Project of the Year Award.

The annual itSMFA Industry Awards for excellence in IT Service Management are presented to those organisations which have achieved extraordinary success from innovative and effective IT practices. They span service desk and IT projects across all industry sectors. itSMF is the international industry body for best practice in IT Service Management, with 54 officially recognised chapters worldwide.

Following a record number of nominations and an extensive judging process, the Service Desk Team Project of the Year award was presented to UWA at the itSMF Australia’s 16th National Conference, at the Telstra Gala Dinner held at Parliament House, Canberra last month.

IS lodged a submission to itSMF for the prestigious industry award following the outstanding results in client satisfaction seen in responses from UWA staff and students in the 2012 University IT Service Quality Benchmark Survey.

UWA was ranked the Most Improved University in the 2012 University IT Service Quality Benchmark Survey, achieving sixth place.

“This was a major turnaround from our in 2011 ranking of 31st place, and also UWA’s highest ever ranking in the survey,” said Mr Walker.

“This achievement was the result of an ongoing commitment to embed best practice in our IT service delivery. Several new initiatives and processes had been introduced over the period with assistance and support from the Service Management team. Each was focused on improving client outcomes,” he said.

This improvement took place as the IS Service Desk team also successfully managed the transition and support of many new and upgraded services introduced through the Business Investment Program, under considerable time constraints for the New Courses framework for the start of teaching in 2012.

“To have achieved such an improvement in Service Quality ranking during this period of major service transitions is testimony to a motivated and inspired Service Desk team backed up by hard work and support from the resolver groups within Information Services,” Mr Walker said.

“It also signals an increased engagement and involvement between Information Services, System Owners and Faculty IT, and the success of our implementation of effective Incident Management and Knowledge processes and other Service Management team initiatives to improve client service.

“The award gives well-deserved recognition to a team that has been focused on bringing the IS vision and values to life through new and innovative practices.”

The UWA Service Desk team has now set itself an aspirational goal of a top three ranking in the 2013 University IT Quality Benchmark Survey, which starts this month.

Our dream team

Iain Walker, Service Desk Manager, and Alan Mullett, Assistant Director Service Management, accepted the award on behalf of the team.

Iain Walker, Service Desk Manager, and Alan Mullett, Assistant Director Service Management, accepted the award on behalf of the team.
Horror stories about renovations are a common element of television programs and barbecue conversations. But the Oral Health Centre of WA and the School of Dentistry are keen to share their good stories of a major renovation which was not only successful and under-budget but actually enjoyable.

The nine-month project to completely redesign and rebuild the top floor of the dental building on the QEII campus was undertaken by staff trades professionals from UWA's Building Workshops, part of Facilities Management.

Robin Ford, Dental School Manager, and John Cochrane, general manager of OHCWA, used words like “excellent”, “superb” and “incredible” to describe the quality of the work and also the camaraderie of the team that did the work, their helpfulness and their willingness to adapt to last-minute changes.

The open plan administration offices for the School and the Centre were shared by staff from Curtin University and TAFE, which train oral health therapists, dental technicians and dental chair assistants.

“We needed more offices, we needed more private and quiet spaces and we needed a more efficient grouping of staff,” John said.

“The project has achieved all that, and provided us with some extra meeting rooms, which we didn’t expect. Who would have thought that by adding walls, we would actually end up with more useable space,” he said.

Robin said the noise factor in the mornings, as about 40 people arrived for work, could be very distracting.

“Now we can shut our doors when we need to, but the office design is still conducive to working together,” he said.

The first thing that had to be done, before the third floor renovation could start, was to find a new home for the IT staff. A big space in the basement needed a lot of work to make it a pleasant working space but that was achieved, along with relocating the linen room. That opened up areas into which staff could move temporarily as the work was done around them.

“Nobody wanted to leave the building, so the team built and hammered and painted around us and it all worked excellently. The building team chipped in to help us move desks and filing cabinets, as we moved around to accommodate their work,” Robin said.

“I think because they are University employees they are very respectful of the work we’re doing and our needs,” John said. “And they were happy to accommodate our whims and last minutes suggestions.”

John and Robin said that, by using UWA’s own team, they saved up to 30 per cent on the cost of the renovation.

Frosted glass walls allow light into newly enclosed offices, ensuring privacy and quiet. An overly large foyer has been reduced to provide more useful space, which has also created a more intimate setting for the photographic gallery of former Heads of School.

The project was overseen by architect Lincoln Tuffin from John Flower Architects and Hugh McCaffrey, manager of the Building Workshops.

“From the builder’s perspective, this level of achievement can only be obtained when you have the full co-operation of the client, coupled with an exceptional architectural team,” Hugh said.

“John and Robin were involved every step of the way, as were all the staff, who gradually moved around the building as the project progressed. We never had a cross work spoken by anybody during the complete process,” he said.

“It was thanks to Lincoln’s understanding and consideration of the clients’ needs that we were able to achieve such amazing results. And dedication and craftsmanship of our employees and contractors is second to none.

“And do you know what? It was all such fun!”
Karen Upton-Davis has been looking through a window at couples’ relationships.

But she’s not a peeping tom: the window is her research into LAT – or Living Apart Together – relationships.

Dr Upton-Davis, a social worker, is investigating private and public implications of couples who are in an intimate committed relationship but live in separate households.

“LAT provides a window through which to examine the shifting nature of gendered relationships,” she said.

Dr Upton-Davis is herself in a LAT relationship which has endured happily for 10 years. After she completed her PhD at UWA on the rise and fall of intimacy, she became interested in couples who had chosen to live apart. She sees it as a political choice, subverting and transforming the gendered norms of cohabitation.

“It is largely driven by women and I find that exciting: that women of a certain age who have previously filled role expectations to carry the caregiving, domestic and emotional load in their relationships are breaking free, increasing their autonomy, while decreasing their burden of care-giving,” she said. “In a traditional marriage, that care-giving includes caring for a husband as well as children and often aging parents – his as well as hers.”

She began her study by interviewing women over the age of 45 who were in LAT relationships by choice. “This choice to conduct a relationship differently to the hetero-normative model of cohabitation makes it part of a feminist discourse,” Dr Upton-Davis said. Her investigation with women found that LAT had the potential to change women’s lives for the better.

While those who LAT vary in age, circumstance (living alone or living with children or parents), sexual orientation, motivations for doing so and future intentions (whether to later marry, cohabit or remain LAT), Dr Upton- Davis initially concentrated her investigations on older women who had chosen to LAT. Dr Upton-Davis said some women she had interviewed felt as though they were making a selfish choice. “But most of them had done all the parenting and care-giving and hard work of a traditional relationship earlier in their lives,” she said. “They weren’t selfish people.”

She said many of them were loving the opportunity to enjoy their grandchildren or even just their own children’s company, without sharing them with a new partner. “Blended families can be very problematic and keeping them apart sometimes seems to work better.”

Most of all Dr Upton-Davis discovered that it was the increased autonomy in these women’s lives that they appreciated the most.

Having established the benefits of LAT for older women Dr Upton-Davis is now keen to discover what’s in it for men. The present recruitment of male participants will help to answer this question.

“I suspect one of the reasons people may choose a LAT relationship is to protect their assets. I’m curious to find out how much of a consideration this is in the choice to LAT,” Dr Upton-Davis said. “I’m also curious to know whether being in a LAT relationship offers some protection against loneliness, a condition that Australian men suffer from to a far greater degree than Australian women.”

If you are a man in a LAT relationship or know a man in a LAT relationship who wishes to participate in this study, please contact Dr Upton-Davis at karen.upton-davis@uwa.edu.au

These UWA researchers have been inspired by their situations to find out how to make life better for people.
How does a three-way family work?

We are all familiar with the challenges faced in Australian society by parents from a different culture.

Socialising, respect for elders, language and dress are some of the issues that migrant families deal with in bringing up their children.

But making the mix even richer – and perhaps more difficult – is a growing number of parents from two different cultures, for whom it is a challenge to combine their lives, let alone live and raise children in a third culture.

Maki Meyer is working towards her PhD in Anthropology and Sociology by studying mixed heritage immigrant families.

She hopes that by examining families’ attitudes, from both the parents’ and the children’s perspectives, she will better understand how families integrate into Australian society and, on the other hand, how they influence Australian life.

Maki was born and brought up in Japan. Her husband Hermann is from Germany and their two sons, now aged 22 and 25, were brought up predominantly in Australia. It was her own family’s experiences that inspired her to do this research.

“As we become more of a global community, there will be more families like us, so it is important to find out how they make it work,” Maki said.

She has already interviewed six families but needs at least another six to complete her research.

“First I talk to the parents, about adjusting to new cultures, parenting, education and values. I want to know how they combine their two cultures while adopting Australian culture at the same time; and how they compromise on raising children, when different cultures can have very different attitudes and practices.

“Next I interview the children. For my study, I’m recruiting families with offspring between the ages of 13 and 29, who have lived in Australia for at least three years and who intend to remain here.

“With the teenage or adult children, I focus on what it’s like to grow up with parents from two different cultures and how they negotiated the influence of three cultures.

“They might not even be aware of it, but most of them will have been involved in constant negotiation with their parents and the wider society with whom they interacted.”

She asks them about school life; about their physically different appearance and how that difference was perceived by their school friends; how they perceive themselves; and how it has affected their cultural identity.

Some children she has interviewed have seen a great deal of compromise between their parents and, as a result, have become very accepting of differences.

“Then I get the whole family in together, which gives them an opportunity to address issues and questions that have arisen in either the parents’ or the offspring’s interviews,” she said.

“I also ask them about their most joyous moment as a family. For many of them, it has been while they were travelling together. But sharing meals, cooking and eating food together, sitting around a table seems to be a very important aspect of retaining cultures for all of them.

“For families who have no relatives in Australia, togetherness as a family is very highly valued.”

Maki said one of the most difficult aspects of bringing up her sons in Australia was young people’s parties and young adult men and women ‘sleeping over’ in each other homes.

“As a European, my husband is much more relaxed and lenient, but I am more conservative. These were not part of my life growing up. And they are exactly the sorts of challenges that mixed heritage families are facing all the time. So I want to hear how they deal with these challenges.”

If you are a mixed heritage immigrant family and can help Maki with her research, please contact her at: 21096394@student.uwa.edu.au
By Michael Sinclair-Jones

It was billed as the biggest Open Day in a Century – and threatened to be one of the wettest.

After a week and a half of solid rain, UWA Registrar Peter Curtis woke at 6am on Sunday to find his house flooded, strong winds and a torrential downpour. “I was very anxious,” he said.

Like Australia’s hopes in Ashes test cricket, months of hard work and planning for UWA’s annual showcase event in its one-in-a-lifetime Centenary Year seemed doomed to a dismal washout.

“But by the time I arrived here just after 10am, the sun was shining and the campus looked fantastic,” Peter said. “The crowds were already good and the atmosphere was excellent.”

So good in fact that UWA Unipark estimated up to 10,000 cars filled the university’s car parks, campus verges and overflow parking on the Nedlands foreshore throughout the day.

With many more arriving by public transport, it’s estimated up to 30,000 people of all ages attended this year’s Open Day.

Umbrellas were cast aside and the campus began to buzz as throngs of visitors started arriving in mid-morning sunshine, eager get a taste of life at UWA. And – as always – there was much to see.

Students in colourful Prosh-style animal costumes, stilt-walkers, a towering black swan and three wooden ducks on wheels provided an entertaining backdrop for young minds of the future to marvel at the many study options available at UWA through a dazzling array of Faculty displays.

An army of UWA student and staff volunteers in blue T-shirts at displays, live demonstrations and information booths worked cheerfully throughout the busy day to maximise public engagement in the festive atmosphere.

Winthrop Hall was packed as parents and children queued to have their arms wrapped in wet plaster casts by medical students, take turns using surgical instruments to stitch mock sutures and try their hand at computerised dentistry.

Over in Arts, teenagers armed with heavy swords and daggers clashed in mock battle on the stage of the New Fortune Theatre as they learned basic moves in medieval combat, or felt the sharp edges of stone cutting tools being cracked from raw flint rocks by student archaeologists.

Science was a big hit, with a huge hairy gorilla handing out balloons at the Bayliss Building entry and lots of colourful exhibits inside, including everyday experiments to stitch mock sutures and try their hand at computerised dentistry.

Thank heavens the heavens didn’t open on Open Day
Down in Business, the spacious entry foyer was packed with balloons, Centenary posters and bustling stalls inviting youngsters to “achieve a world-class business education”.

Cheerful student helpers gave myth to the notion that the world of finance is dull and serious.

In Engineering, high school students splashed barefoot through thick green glop to experience the properties of fluid mechanics, took turns to sit behind the wheel of bright yellow racing cars and marveled at drone model helicopters.

A star turn – as ever – was Chemistry Professor Allan McKinley’s annual Magic Show.

This year noisier and more colourful than before, with brilliantly shooting flames and unexpected explosions and vivid chemical reactions.

The aim of UWA Open Day is to showcase the wealth of knowledge and opportunities available to all at a world-class university, and to demonstrate that learning can be fun and vitally rewarding, both personally and to help create a better future for global communities.

Vice-Chancellor Paul Johnson described UWA Open Day 2013 as “outstanding” and “one of the most successful to date”.

“To encounter so many future students, their families and the wider community enjoying the wonderful atmosphere on campus was a highlight for me,” he said.

Professor Johnson thanked the many staff and student volunteers for their hard work, and the UWA 2013 Open Day team in Public Affairs for months of overall planning and implementation to help to make the Centenary Open Day such a success.
Antivenom may be the definitive treatment for snakebite, but it can also cause an extreme allergic reaction that is taking its toll in developing countries.

Assistant Professor Shelley Stone from Emergency Medicine and her collaborator, Professor Geoff Isbister from the University of Newcastle, are working with a team of Sri Lankan investigators in a global initiative to discover the link between snake antivenom and the allergic reaction it can cause, known as anaphylaxis.

“Snake bite is a significant problem in the developing world, especially India, Sri Lanka, South East Asia and parts of Africa where the rate of anaphylactic reaction to antivenom is unacceptably high,” Dr Stone said.

“Patients end up in hospital for longer periods of time which consumes limited resources, while patient morbidity and mortality is higher.”

In the study, blood samples were collected from Sri Lankan snake bite victims both before and after administration of antivenom. These samples were used to compare the immune response of those who experienced anaphylaxis and those who did not. While the study is ongoing, preliminary results suggest that tryptase and histamine (two compounds released by immune cells) are responsible for the high rate of anaphylaxis.

Usually when a person is bitten by a snake, venom circulates through the victim’s bloodstream, beginning to cause severe tissue damage. Antivenom is the only treatment currently available, and when administered it acts as a molecular sponge soaking up the venom and blocking its effects.

In the best case scenario, antivenom will save the victim’s life, but if not, it causes anaphylaxis, an extreme immune response characterised by difficulty breathing, hypotension, cardiac arrest and occasionally death.

It is this extreme immune response that contributes to the 100,000 deaths from snakebite per year worldwide, especially in poorer rural areas such as in Sri Lanka, where the rate of anaphylaxis is 10 times that in Australia.

But why does antivenom cause this reaction? Dr Stone, who developed a fascination with immunology as a third year science undergraduate at UWA, explains: “We think something in the antivenom preparation is triggering the immune cells to respond. We suspect that that there are impurities in the Indian anti-venom used in Sri Lanka that trigger an immune response, but this can’t be the whole story.”

Here in Australia, access to the swift administration of quality anti-venom has reduced deaths from snakebite to an average of three per year, despite our large population of poisonous snakes.

This is in stark contrast to areas of the tropics that rely on subsistence farming, including Sri Lanka and India, where an estimated 35,000 people die from snakebite per year. The impact is becoming so severe, that the World Health Organisation recently named snakebite a ‘neglected tropical disease’ based on its high mortality rate and neglect by the medical and scientific community.

Dr Stone is optimistic her global team can reverse the trend. Her long-term goal is to develop a simple, cost-effective way to improve the quality of antivenom produced in countries with limited resources.

“It may take time, but we have the potential to make a real difference to public health in the developing world,” she said.
Quantum circuits =
a new breed of super-computers

By Naomi Altman

Football finals, Christmas morning, an exotic holiday: these are the things people describe as exciting.

But it seems quantum computers have been added to the list, and it is not only physicists who are excited about their possibilities.

BlackBerry, Lockheed-Martin and Amazon are just a few of the companies reportedly excited about and supporting the development of computers that harness the mysterious properties of sub-atomic particles.

UWA researchers are bringing the reality of quantum computing a step closer by finding a way to create quantum circuits: the backbone of quantum computers.

In the sub-atomic realm of quantum physics, particles can occupy more than one state at a time. Herein lies the power of quantum computers.

Where a conventional computer is forced to assume a binary 0 or 1, a quantum bit (a qubit) can be both at once. Quantum computers are not limited to the sequential yes/no logic of classical computers, since they can explore the options ‘yes’ and ‘no’ at the same time.

In this way, quantum computers can solve algorithms that would take longer than the age of the universe using conventional machines.

Professor Jingbo Wang leads the research in quantum computation in the School of Physics. When not soundly beating her students at table tennis in the third year common room, her focus is on exploring the possible applications of quantum circuits. She said the implications for security and defence may be just tip of the iceberg.

“Quantum computation utilises entirely new design architecture and promises to solve problems that are intractable on conventional computers. There’s huge potential for quantum computers, and we’re just working out what some of these applications are,” Professor Wang said.

Quantum computers could effortlessly crack the encryption used in emails, online banking and even military codes. They would also allow cancer researchers to scan through vast amounts of genetic data in a fraction of the current time.

Yet there are still some serious obstacles standing between the theory and the real thing. The biggest hurdle is the measurement problem: trying to retrieve the answers from inside the computer without damaging the information in the process. This is one of the most difficult problems of quantum physics, since it is impossible to make a measurement without affecting the system in some way.

Professor Wang’s research is overcoming this barrier by developing new quantum circuits that steer the quantum particles into special final states that can withstand any disturbances caused by the measurement process.

The excitement about quantum computers in the commercial sector is reflected at a grassroots level, with record undergraduate enrolments in physics at UWA. Professor Wang believes this is related to the appeal of working with nature at its most fundamental level.

“For around 100 years, people have tried to understand quantum physics. Today we are able to control it, and to exploit its new powers. It offers the prospect of harnessing nature at a much deeper level than ever before. This is something truly exciting.”

The sub-atomic scale will be the key to unlocking a revolution in modern computers. It may be many years before we can hold a quantum BlackBerry, but Professor Wang’s research is bridging this gap one quantum circuit at a time.
Researchers hope it’s Eureka this time

For the second year in a row, David Sampson, Robert McLaughlin and Christobel Saunders have been selected as finalists for the ANSTO Eureka Prize for Innovative Use of Technology.

Their project is the development of the world’s smallest hand-held microscope-in-a-needle to display 3D images detailed enough to detect tiny amounts of cancer, and their discovery will help guide surgeons to completely remove cancer more reliably in breast cancer surgery.

The Eureka finalists, which were announced on 2 August, also include The Future Farm Industries Cooperative Research Centre Enrich Project Team of researchers from UWA, CSIRO and the South Australian Research and Development Institute. The collaboration has made the finals of the Caring for our Country Landcare Eureka Prize for Sustainable Agriculture.

Recognised as a world leader in the field of optical and biomedical engineering, Winthrop Professor Sampson is head of the Optical and Biomedical Engineering Laboratory where the work was carried out. He is also Director of the Centre for Microscopy, Characterisation and Analysis and has received several accolades this year. In June, he was elected a Fellow of the prestigious international society for optics and photonics, SPIE, and earlier was elected a Fellow of the Optical Society (OSA).

In 2011, Research Associate Professor McLaughlin won the Patron’s Award of the National Breast Cancer Foundation for his contribution to the use of the microscope-in-a-needle in breast cancer.

Winthrop Professor Saunders is one of Australia’s leading breast cancer surgeons and researchers and heads up breast cancer trials on new prevention and treatment strategies. She is also a previous winner of the Patron’s Award of the National Breast Cancer Foundation.

While Professor Sampson is currently on sabbatical and Professor Saunders is on long service leave – both in Europe – they will return to Australia in time for the Awards dinner in Sydney on Wednesday 4 September when the winners will be announced.

The Future Farm Industries CRC Enrich project is a collaborative effort of researchers, extension staff and land managers across southern Australia. It aims to provide knowledge and development of sustainable grazing systems with multiple benefits for farmers in low-to-medium rainfall areas through the planting of Australian perennial shrubs.

Associate Professor Phil Vercoe, from UWA’s School of Animal Biology and Institute of Agriculture, is involved in native plant chemistry research as part of the Enrich project.

The Australian Museum Eureka Prizes are Australia’s most comprehensive national science awards, honouring excellence across four categories of research and innovation, leadership and commercialisation, science communication and journalism and school science.
Kael and Louise Driscoll got to know Paul Laffey on the number 97 bus. They now contribute to an academic prize in his honour, to help pass on to somebody new each year the opportunities he had as a young postgraduate student.

“It’s not a big amount of money – just $50 a year – but we wanted to help keep Paul’s memory alive,” said Kael, who first met him in the Scholars’ Centre. “It’s one of the ways we give back to UWA.”

Kael and Louise both work in Information Services, based in the Reid Library. They are graduates of the University and an example of the growing number of staff alumni who are keen to give back to their alma mater.

The couple, who both started tertiary studies at UWA in 1992, are great supporters and advocates of the University. They feel lucky and proud to be associated with the campus and the UWA community.

“We both feel very loyal to UWA,” Louise said. “Especially now, as parents of two little girls. The University and especially IS and the Library really do ‘walk the talk’ when it comes to work-life balance. We are able to be flexible and use purchased leave so we can each spend a day a week at home with Ruby and Rosie.”

They met as students when Kael moved into a share house with Louise’s brother.

Louise studied Arts, did a Dip Ed, then started working at UWA as a library officer. After his BA and Honours, Kael began a PhD in English, working part-time in the library.

They both loved library work and decided to study together in 2001/2 to earn a graduate diploma in library and information studies. “We were lucky to be able to keep working full-time while we studied externally,” said Louise.

The pair married in January 2003, just after their graduation.

“I say to people: ‘I’ve spent half my life at UWA’ and sometimes they respond by asking if it’s time for a change. But there are always new and exciting challenges here,” Kael said.

“We feel that just by working here we are giving back, in return for our education,” he said. “But we wanted to do more, especially for a great UWA person like Paul.”

“Paul used to spend a lot of time in the Scholars’ Centre when I was working there, then we both got to know him on the bus heading to and from UWA. We weren’t really close friends, but we had an immediate connection with him. He was just one of those wonderful people you feel lucky to meet, a true gentleman and scholar.

“He died suddenly and unexpectedly in his mid-30s and we hoped that somebody would do something in his memory, so that we could contribute. We were so pleased about the scholarship.”

The Dr Paul Laffey Memorial Prize is an annual award of $500 to a postgraduate history student who produces the best refereed article or book chapter arising from their work. It was first awarded in 2009.

As staff of UWA Kael and Louise are happy to be ongoing alumni donors. “But there are other ways you can give back to the University community too,” Louise said.

“I feel that the email trading list provides an amazing chance for people to give back to each other. It’s a great example of staff supporting staff. We gave away a car on the trading list once. It wasn’t worth much but it helped somebody who really needed it.”

The Driscolls are already passing their love of UWA on to their daughters. Kael said one of Ruby’s first words was ‘university’. “The girls love coming here and already feel a connection to the campus,” he said. “Whenever they see the clock tower they both shout ‘university’ as loud as they can!”

If you are interested in being part of UWA’s philanthropic mission and would like to discuss a donation, either through staff giving or the alumni annual fund, please contact the Development and Alumni Relations office on 6488 8000 or development@uwa.edu.au.
The latest greatest Centum will last long into the future well after the styrofoam figures have crumbled.

The two metre high 500 kilogram numbers declaring the University’s age were lovingly created by Len Zuks, an artist of international acclaim and a modest tradesman in the Building Workshops.

The gleaming silver Centum, made from scrap metal, sits among the trees between the Mathematics building and James Oval. It was installed in time for Open Day.

“I just love the University,” Len told a small crowd gathered to celebrate the silver Centum’s installation.

“It is because of my great regard for the process of the University that I was inspired to construct this piece,” he said.

“I am thrilled that my personal desire to show respect for what UWA stands for, what it has done for my enlightenment and awareness and what it represents as a high achieving institution has been made possible.

“Now the sculpture is on its own on campus. Mute as it appears to be, it is not. It screams softly of UWA’s success and achievement in the past 100 years and the promise of the next.”

Winthrop Professor Grady Venville, Dean of Coursework Studies, launched Len’s Centum, describing it as “absolutely gorgeous.

“It looks so amazing among the eucalypts,” she said. “New and sparkling but at the same time, rustic and textured.”

She said staff and students had become quite fond of Centum this year and would love to see this more permanent version of the numbers that have taken on a personality.

Len’s Centum is made from scrap metal that has been around his studio for many years. But some of it is more than scrap metal: it is a real and tangible part of the history of UWA.

He showed John Moore, a former colleague from the School of Physics, part of a zero that had been made from the old synchrotron.

“I dismantled that synchrotron 20 years ago!” John laughed.

Len publicly thanked Hugh McCaffrey, the Building Workshops manager, and Jay Jay Jegathesan, Physics’ School Manager, for their unwavering support and encouragement in seeing the project through to the end.

It is uncertain whether the silver Centum will remain overlooking James Oval, so make sure you get down there to take a look at it before the year’s end.

**Silver Centum lurks among the leaves**

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**Mastering Mindfulness**

UWA staff are being offered a range of opportunities to ‘master mindfulness’, through the Staff Health and Wellbeing Program.

Mindfulness can help you to engage more fully with the present moment and let go of unhelpful thoughts and habits.

In August a lunchtime session was held on *Mindful Eating*, presented by dietitian Nick Nation from Diabetes WA. Nick talked about the latest research into the role of environmental influences on our dietary choices, and provided some practical suggestions for how to make more conscious food and drink choices, and take more time to enjoy our meals.

A new offering for staff beginning mid-September is a six-week *Introduction to Mindfulness* course.

Mindfulness training was identified as an area of high interest from the Staff Health and Wellbeing Survey last year, and a course has been developed in conjunction with the School of Psychology.

This six-week course will introduce participants to the basic principles and practices of mindfulness, and how to apply them to personal and professional life. Staff can find out more or register their interest through the mental health page on the wellbeing website: www.safety.uwa.edu.au/wellbeing.
But they could have been penned specifically for this year’s show, HERE&NOW13 at the Lawrence Wilson Art Gallery, which features the work of 11 WA artists with disabilities.

They are truly ‘at the edge’ and ‘on the boundary’ whether by choice or circumstance, and their work sure has ‘a vibrancy that is palpable’.

Paintings, sculptures, installations, stills from film and even multi-media performance art make up a terrific exhibition which has been 18 months in the making.

A program of mentorship and professional development and residencies for these artists has been collaboration between the Perth Institute of Contemporary Art, Central Institute of Technology (formerly TAFE) and the Fremantle Arts Centre.

It is the culmination of a partnership between the Department of Culture and the Arts, the Disability Services Commission, UWA’s Cultural Precinct, the City of Subiaco, DADAA and New York’s Museum of Modern Art (MOMA) and the League of Artist Natural Design.

But above and beyond all the organisations and their capital letters is the joy and fulfilment that the artists have experienced, the lessons we have all learned about access to art, and the wonderful works themselves.

Lee Kinsella at the Gallery and curator Katherine Wilkinson have put together a brilliant show. It was launched with a symposium at UWA on disability and the arts, with a keynote address by Carrie McGee, MOMA’s associate educator for community and access programs.

Lee said the weekend symposium was a huge success. “We had representatives from local government and access officers and people involved in support structures for social disability,” she said.

“It was quite confronting to hear the statistics about access to the arts for people with disabilities. But there was also a lot of joy shared over the weekend.

“We now have a greater awareness across the Cultural Precinct of access and inclusion of people with disadvantage and disabilities.”

The Gallery is trialling a new smartphone app for HERE&NOW13 as part of its ongoing commitment to improving accessibility. It provides audio guides, captions, audio descriptions, and videos with Auslan translations for a selection of the artworks. More information is available from the Gallery front desk. The exhibition runs to the end of September.
And the annual Staff Sports and Fun Day is an opportunity to do that with your colleagues.

This year it is just half a day – so no excuses! Some staff found it difficult to commit to a whole day away from the office, the workshop or the lab, so this year, we can all work hard in the morning and take the afternoon off. Mark Friday 8 November on your calendar.

To fit everything in, the traditional competitive sports (netball, soccer, bocce, volleyball and table tennis) will be run concurrently with the novelty events. But everybody will come together for the old favourites: Fly, tug-o’-war, the VC’s Dash and the Dean’s Dash.

The story of her escape from the Normandy coast to Toulouse in the unoccupied zone is not one of high drama and Resistance heroics, but of quiet determination and courage. It is also the story of a unique post-graduate experience and an international academic collaboration. It gives us an insight into an Australian’s love affair with France, an experience which radically changed and enriched her life.

Robin Adamson studied French at the University of Queensland and then in Paris before coming to work in the French Department at UWA where she met Christine Morrow. She is a Senior Honorary Research Fellow in European Languages and Studies where her research centres mainly on the French language.

Members: Free | Non Members: $5 donation

Further information contact: 6488 2354 or email susan.oconnor@uwa.edu.au

NOTICeS

FUND GRANTS

APPLICATIONS FOR 2014 DIVERSITY INITIATIVES FUND GRANTS NOW OPEN

Is there an equity and diversity initiative in your part of the campus that you would like to see implemented that would support UWA’s widening participation agenda?

The focus of the Diversity Initiatives Fund is now for current and potential students who may come from a low socio-economic background.

Please consider applying for a Diversity Initiative Fund Grant.

Applications are invited from individuals, groups, schools or faculties seeking funding to assist in the development of targeted diversity initiatives that:

• Are creative, local area programs
• Aim to increase the participation, retention and/or success of students from low socio-economic backgrounds
• Demonstrate clear and achievable outcomes and assurance of quality
• Are innovative and break new ground at this University

Applications for funding close on Friday 22 November 2013 and all applicants will be notified by mid-December. Successful applicants are expected to complete their project during 2014.

An application form can be downloaded from the Equity and Diversity web site at http://www.hr.uwa.edu.au/2189222 or by contacting Anneli Strutt on 6488 3873. Applications should be sent to DIF Applications, Equity and Diversity, M369.

NOMInATIOnS

CALL FOR NOMINATIONS TO THE ACADEMIC BOARD

Nominations are invited for the election of academic staff and general staff to the Academic Board. Elections will be carried out by postal ballot in these two categories. Research staff should apply in the relevant category according to whether they hold an academic or general staff appointment.

Further details of the requirements in each category, nomination forms and optional proformas for summarising prior experience may be found at the following link: http://www.aps.uwa.edu.au/home/uwas_committee_system/board/elections/calhnomin

Given that there is considerable gender imbalance on the Board, nominations from women are encouraged.

Completed nomination forms, together with optional experience summary proformas, must be returned to the Academic Secretary by 5pm Monday 9 September 2013.

Prospective nominees should note that the Academic Board has four scheduled meetings per year, at 2:15pm on the third Wednesday of March, June, September and November. The meeting dates in 2014 will therefore be: 19 March, 18 June, 17 September and 19 November.

Information on the Board can be found at: http://www.aps.uwa.edu.au/home/uwas_committee_system/board

CLASSIFIeDS

TO LET

QUINDALUP: A charming, recently renovated, fully self-contained redbrick cottage only 400m from beautiful Geographe Beach and 2km on five acres of bush and is central to Margaret River wineries, restaurants and attractions. The home has 3 bedrooms and 2 bathrooms (one an ensuite), a large covered deck and open plan living. The house sleeps 8. Discount prices for inquiries through UWA News, starting from $200 per night. Contact Jani on 0418 949 318 or zamiahouse@gmail.com.

Housesitting

UK academic couple seek house-sit in Perth over Christmas vacation. We are responsible, non-smoking, experienced house-sitters (pets, plants and pools no problem). We can offer a return stay in our small flat in central Paris.

Contact: fhtau@bristol.ac.uk

NOTICES

ARCHITECTURE WALK

The graceful buildings, the beautiful gardens, the majestic trees, the sweeping river views: all of these make up the big picture of the Crawley campus this is so loved.

But there is even more delight in the details.

Architect and historian Ron Bodcaw is conducting another of his popular architectural walks around the campus on Saturday 7 September. Significant buildings and space on the Crawley campus are embellished with applied or freestanding artworks that are not always noticed. Sometimes they are inherent in the architecture such as the winged lion frieze on the eaves of Winthrop Hall or the decorative panels built into the Institute of Agriculture building.

Courtyards, lobbies and landscaped spaces are home to sculptures and fascinating details.

Join the Art in Architecture Walk to discover, rediscover and be surprised at what surrounds you.

The Walk starts at 2pm at Winthrop Hall and the UWA Historical Society asks for a $5 donation.

Register by emailing fran.pesich@uwa.edu.au (or 0417 178 275) or ronatbodycoatarchitect@iinet.net.au (0384 6166).

FRIENDS OF THE UWA LIBRARY TALK

Tuesday, 10 September 2013

Refreshments 7pm, Presentation 7.30pm

Reid Library ground floor meeting room

ESCAPE FROM PARIS – CHRISTINE MORROW’S UNFINISHED STORY

Presented by Dr Robin Adamson

Christine Morrow studied French at UWA and went to France to study just before the outbreak of World War II. In June 1940, she managed to escape from the occupied north of France. She completed her doctorate at the Université de Toulouse in 1941 and returned to Australia, teaching in the French Department at UWA from 1947 until her retirement in 1969.

The first whiff of spring is in the air, and thoughts turn to being more active.

Get moving – only two months to go!

The story of her escape from the Normandy coast to Toulouse in the unoccupied zone is not one of high drama and Resistance heroics, but of quiet determination and courage. It is also the story of a unique post-graduate experience and an international academic collaboration. It gives us an insight into an Australian’s love affair with France, an experience which radically changed and enriched her life.

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Located at the end of a private road, this cottage offers privacy and security, a lovely natural vista out over Toby Inlet Reserve, and is a great cottage for all seasons. Please go to www.quindalup.net.au for further information.

HOLIDAY HOUSE INJIDUP BEACH: Zamia House is an elevated, north facing contemporary home with 180 degree views across Wyadup valley and an ocean view towards Canal Rocks. Injidup Beach is 2km away. The house is set on five acres of bush and is central to Margaret River wineries, restaurants and attractions. The home has 3 bedrooms and 2 bathrooms (one an ensuite), a large covered deck and open plan living. The house sleeps 8. Discount prices for inquiries through UWA News, starting from $200 per night. Contact Jani on 0418 949 318 or zamiahouse@gmail.com.

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Contact: fhtau@bristol.ac.uk
HOUSE SITTER
AVAILABLE SEPTEMBER ONWARDS: My uncle is coming back to Perth again this September, and is looking for a house sit position for up to six months or more and reasonably close to beaches if possible (he is very fit and swims all year). He looked after my auntie’s house for six months last year, prepared it for agent rental inspections and responsably looked after the inside and outside of the premises. He loves animals and cared for their cat Fluffy. Please phone Rodney Webb on 0400 556 086 if interested. References and a Police Clearance available.
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Send your ad to: staffads@admin.uwa.edu.au before each monthly deadline.

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UWA Convocation: 2013
Second Ordinary Meeting

The Warden of Convocation invites all UWA graduates and other members of Convocation to attend its Second Ordinary Meeting.

The Honourable Justice James Edelman of the Supreme Court of Western Australia will speak on Challenges for university education in the next century.

There will be reports from the Acting Senior Deputy Vice-Chancellor, Winthrop Professor Alec Cameron; the Warden of Convocation, Warren Kerr AM; and the Guild President, Cameron Barnes.

Date: Friday 20 September 2013
Time: 5.30pm for a 6pm start
Venue: The University Club of WA, The University of Western Australia
RSVP: 6488 3006 or convocation@uwa.edu.au
convocation.uwa.edu.au

The Hon. Justice James Edelman

Oral health for baby boomers.

From cracked teeth and old fillings to more serious concerns, oral health issues experienced by people in their middle years require special care to conserve a youthful, natural smile. Dr Chai Lim and his team have a special interest in dentistry for baby boomers.

Call now for a consultation 9389 1482
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IN A CAMPUS EMERGENCY DIAL 2222
Mathematics is no longer a man’s world

Winthrop Professor Cheryl Praeger
Centre for Mathematics of Symmetry and Computation

It was an honour to be awarded the Thomas Rankin Lyle Medal in May – the first woman to win it.

And it made me think of many fortunate things in my life that conspired to enable me to become a mathematician.

I think of my mother persuading my father to allow me to do an ‘academic course’ at high school, and then be permitted to finish high school and proceed to university (providing I won a scholarship).

I remember my summer vacation scholarship at the Australian National University where, as a third year undergraduate, I experienced the immense fun and challenge of working on an unsolved mathematics problem – and saw for the first time a research department full of mathematicians. That experience made me determined to do a PhD in mathematics. It also introduced me to my vacation scholarship supervisor, Professor B H Neumann, who became my mentor and life-long friend.

I also met Bernhard’s wife Hanna, the first female Professor of Mathematics in Australia – and the first woman mathematician elected a fellow of the Australian Academy of Science. Everything I learned about Hanna confirmed her as my role model – she was the kind of professor I wished to become.

I think of the Commonwealth Scholarship which took me to Oxford to do my Doctorate (D Phil), and of the wealth of mathematicians I could interact with there and during postdocs at the ANU and the University of Virginia in the US.

I think of my wonderful husband John Henstridge who was determined that I should be able to continue with my research – even if it meant buying me my own IBM golf-ball typewriter in the case that academic positions were no longer available! (That shows how old I am.)

I am grateful also to my many colleagues around the world, and especially those at UWA: former Vice Chancellor Alan Robson supported my application for a Federation Fellowship, which led to the establishment of my research group as the Centre for the Mathematics of Symmetry and Computation. My colleagues and students in the CMSC create an exciting and stimulating work environment. I so much enjoy working collaboratively with all of them.

As well as these people and events, yet more serendipity induced my passionate interest in the Mathematics of Symmetry and Computation.

I was reminded of this on reading a short biography of Thomas Rankin Lyle. I learned that in 1896, on hearing news of Röntgen’s discovery of a mysterious new form of radiation, now called X-rays, Lyle used his unique combination of skills to quickly assemble the apparatus needed to take what were probably Australia’s first X-ray photographs.

A similarly ground-breaking mathematical achievement – the classification of the finite simple groups (the atoms of symmetry) – has engaged my attention and energy for most of my career. By building and exploiting the power of this classification I helped to transform our understanding of huge complex symmetrical structures that arise in areas like Information Technology and Biology, as well as in Mathematics itself.

Applying the simple group classification in algorithm design allows digital computers to make accurate deductions about these structures cutting out many time-consuming verification tests. When applying my first recognition algorithm, developed with Peter Neumann, it felt rather like a wormhole in space-time allowing us to take ‘shortcuts’ to the answer.

It was a delight to be presented with the Thomas Rankin Lyle Medal by Professor Suzanne Cory, only the second female President of the Australian Academy of Science, and such a distinguished president.

I am also enjoying the privilege of serving on the Executive of the International Mathematical Union with its first female President, Professor Ingrid Daubechies.

Mathematics is no longer a male domain.

And it’s important that girls as well as boys are able to see what may be possible for them, and that it is important to keep studying mathematics and science.