

ORIGINS

2009 Edition 1





ORIGINS

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Contributors



keith christian Animal physiologist and ecologist, Keith Christian has spent more than two decades at Charles Darwin University (and its precursors) where he is currently Professor of Zoology. He also has research interests in biological control and evolution. For this issue, Professor Christian explores the emerging research behind the science which has allowed crocodiles to survive major catastrophes over the millennia.



richie hodgson Now into his fourth edition of *Origins* as a contributor, CDU's Media Officer Richie Hodgson has written several articles for this issue based on interviews with CDU researchers, lecturers and alumni. His story on the desperate situation of maternal mortality in Papua New Guinea offers a disturbing insight into a crisis which continues to cripple the country's health system.



row booker Row Booker recently joined CDU's media team after immigrating to Australia from the United Kingdom, where she worked as a radio reporter and news producer for the British Forces Broadcasting Service. She currently is CDU's Marketing Communications Officer. Row writes several articles in this edition of *Origins* on the upcoming Charles Darwin Symposium, "Charles Darwin: Shaping our Science, Society and Future". She also writes about the generosity of an NT family in donating a substantial sum of money to support environmental research students.



jason m'intosh Jason McIntosh is CDU's Public Relations Officer in Alice Springs. He enjoys showcasing the successes of staff and students across CDU's regional campuses and centres. Jason says he's never looked back since returning to Alice Springs from "the big smoke". His contributions to this edition include an article about a Russian immigrant who has established a new life in Nhulunbuy after learning English through CDU.

cover Courtesy of Sprout

inside front cover Alan Griffiths Jooba from the Waringarri Suite 2008 Etching on paper image 25 x 25cm paper size 52 x 40cm

photograph Courtesy Northern Editions

On the move

As the Northern Territory's premier tertiary education provider, Charles Darwin University performs a crucial role in the wider community. The Territory's much-vaunted vitality is, in part, the result of the dynamism of its own university.

CDU has intense working relationships with a great variety of individuals and organisations throughout the NT and beyond. We are indeed fortunate to work within one of the world's most culturally and biologically diverse regions.

At the same time, the Territory's unique challenges are also well-documented, and part of the mission of the university is to develop knowledge that will solve complex problems existing in our region. In doing so, CDU is indeed a valuable asset in the social, cultural, intellectual and economic development of Northern Australia.

The Territory has every right to be proud of our achievements, not only in helping to build a strong community in the north, but also in providing higher education and vocational education and training for local, national and international students. We are young and, for an institution that straddles the entire Territory, we are nimble. We can respond quickly to new demands and opportunities.

As an institution, we must be agile and our agility is reflected in the theme of this edition of *Origins*. The articles that follow are based



on the theme, "On the move", and provide a taste of the contributions CDU is making in higher education and VET teaching, to the community through our partnerships, and to the lives of many individuals. The theme helps to illuminate the dynamism that is required of CDU as we meet our responsibilities to the NT community, face the geographical challenges of our location, and work with our diverse but small population base.

In this issue you will read about research that will assist policy-makers to understand the movements of overseas immigrants who come to the Northern Territory. This group represents a significant sector of the NT population and little work has been undertaken in the past to understand the demographic and economic impacts of these people.

You will discover how CDU is helping to address a maternal mortality crisis in Papua New Guinea, which is ranked among the worst in the world in regard to women dying in childbirth.

And you will learn about how a university lecturer from the former Soviet Union is working to rebuild her life in Gove with the help of English classes offered through CDU.

This edition also showcases the Charles Darwin Symposium which will celebrate the 200th anniversary of Charles Darwin's birth and the 150th anniversary of the publication of "On the Origin of Species".

The Symposium's keynote speaker, Professor Tim Berra, along with other prominent presenters, opens up the discussion in this *Origins* ahead of the September event.

I hope you enjoy these and other articles and regular columns in this edition, and that you gain a deeper sense of the impacts of our university.

o

Researchers win Birds Australia award

Two prominent CDU researchers have received a national award to honour their outstanding contributions to the field of birds in the Australasian region.



Director of the School for Environmental Research, Professor Stephen Garnett, and the Biodiversity Information Officer with Tropical Savannas CRC, Dr Gabriel Crowley, were awarded the prestigious D. L. Serventy Medal by Birds Australia (previously the Royal Australasian Ornithologists Union) for their contributions to publications in the field of ornithology.

Partners in life and work, Professor Garnett and Dr Crowley have made a significant, pivotal and unique contribution to the knowledge and conservation of Australian birds.

This contribution has been made through hands-on intensive research, the compilation of systematic overviews of the conservation status of Australian birds, and the development and maintenance of networks of ornithologists and others, nationally and internationally, with interest in the management of Australia's threatened birds.

o

left

Award winners, Professor Stephen Garnett and Dr Gabriel Crowley.

NT academic tops Australia in vocational teaching

CDU has blitzed the rest of Australia's training providers to take out the Institute of Trade Skills Excellence (ITSE) Teacher of the Year award for 2008.



above
Dr Brian Heim plans to put his \$10,000 prize to good use.

CDU's NT Manager of the Primary Industries and Community Services Industry Division, Dr Brian Heim was announced the winner.

It was the first time the Territory has participated in the awards, with Dr Heim scooping not only the Agricultural Teacher of the Year Award, but also the ultimate accolade of ITSE Teacher of the Year 2008.

Originally from Texas, USA, Dr Heim has worked at CDU's Katherine campus for the past six years.

"To win this award is a tremendous honour. It goes beyond explanation to say what it actually means to me," he said.

Dr Heim said he believed that an agricultural course he had developed in direct response to industry demand secured the prestigious award.

"I think it's the job of vocational education and training (VET) teachers to respond rapidly to industry and to meet their needs wholly."

He said he had strong competition in the awards. "I have to say the quality of the other VET teachers nominated for the award was amazing. I actually had picked out in my own head who I thought was most likely to win and of course it wasn't me, but to be told I had won – it was just an amazing surprise."

The award comes with a \$10,000 cash component designed, in part, to help fund a project to benefit industry, students and the winning teacher.

Dr Heim plans to use the money to develop his existing animal studies program into an online course.

o

\$2.3 million in scholarships boost elite engineering course

Scholarships valued at more than \$100,000 each are on offer to build the infrastructure of the Northern Territory.

CDU has developed a new Bachelor of Engineering Co-operative degree program to link with local and national industry, combining paid work with study.

The NT Government Department of Planning and Infrastructure (DPI) is providing \$2.3 million to fund up to 20 scholarship places on the new course.

The scholarships are valued at up to \$117,156 each, with recipients receiving a stipend of \$15,000 for each full year of the four and a half year degree course. The remainder of the scholarship award – almost \$50,000 for each student – is in the form of paid work placements with the DPI.

DPI Chief Executive Officer, Richard Hancock said students would gain practical knowledge and work experience on a range of infrastructure projects to build the NT.

“These work experience placements will provide students with on-the-job skills and experience, and opportunities to develop close working relationships with professional engineers,” Mr Hancock said.

CDU’s Head of the School of Engineering and Information Technology, Professor Friso De Boer said the quality and structure of the Co-op degree would provide benefits to the NT by supplying more job-ready engineers to the workforce, while the scholarship program would attract and retain the best and the brightest in the Territory.

o

below

Award-winning Engineering students (from left): Luka Bisevac B.Eng/B.Applied Science (winner 2008 VC’s prize); Lachlan Prescott B.Eng-Co-op (winner 2009 VC’s prize); Professor Friso De Boer, Head of CDU’s School of Engineering and IT; Joanna Winslade B.Eng-Co-op (winner 2009 VC’s prize) and Ryan Prsecott (CDU B.Eng – 3rd year).



above

CDU baker David Barker (far right) celebrates his win in Italy.

Second place ‘belissimo’ for NT master baker

A talented Territory baker and his Australian team nearly cleaned out the hosts after winning second place at an international baking competition in Italy.

Charles Darwin University’s Palmerston-based Bakery Lecturer David Barker competed in the SIGEP Breadcup 2009, one of the world’s largest professional trade fairs dedicated to bakery, confectionary and gelato products.

He joined three other teammates in the seaside town of Rimini, taking on European and Mexican bakers in various competitions.

Thousands of people and a throng of media followed the team as they produced traditional and innovative breads, a cake, art work using dough and a showcase display all within strict time limits and with defined ingredients.

Mr Barker’s European adventure started at the 2007 Melbourne Food Expo where he wowed the judges with his Australian-themed rosella sour dough bread and was asked to represent the nation in Italy.

The team also spent a busy two weeks visiting Italian bakeries and major manufacturing facilities before travelling to France where they attended a world pastry competition, Coupe du Monde de la Pâtisserie, in Lyon.

Mr Barker said his favourite food on the trip was Italian pizza.

“They have half the toppings and 10 times the flavour of those here in Australia,” he said. “I couldn’t believe how good they were.”

o

Unsafe abortion ‘a leading cause of death’

Unsafe abortion is a leading cause of death for pregnant women globally, according to a prominent CDU researcher.

Research Associate with CDU's Graduate School for Health Practice, Dr Suzanne Belton has completed the first study on unwanted pregnancy in East Timor.

Entitled “Maternal Mortality, Unplanned Pregnancy and Unsafe Abortion in Timor-Leste: A Situational Analysis”, the study was presented during East Timor's Institute of Health Sciences' first Congress on Health Sciences in early December 2008 in Dili.

Co-authored by Dr Belton, Andrea Whittaker and Dr Lesley Barclay, the study investigated and recommended strategies to reduce morbidity and mortality associated with unwanted pregnancy and unsafe abortion.

The maternal death and fertility rate in Timor-Leste continued to be very high, but the proportion of maternal mortality due to unsafe abortion was unknown.

Dr Belton said the law regulating termination of pregnancy in Timor-Leste was highly restrictive and women could not request elective abortion for any reason, including to preserve their health or save their lives.

“A huge problem is that there has been no research conducted on unsafe abortion since Timor-Leste's independence from Indonesia in 2002,” she said.

“This study describes the context of unplanned and unwanted pregnancy and fertility management, as well as investigating and canvassing a way forward.”

Dr Belton said a number of key findings in relation to induced abortion were uncovered.

“Key findings included that induced abortion continued to be performed in secret, 40 per cent of all emergency obstetric care was managing and treating complications from early pregnancy losses, and doctors and midwives continued to be reluctant to speak with women about induced abortion,” she said.

○

Indigenous coxswains to help protect coastline

An innovative Searanger program hosted by CDU has provided real training and employment opportunities to Indigenous people.

After two weeks on Groote Eylandt covering navigation, boating procedures, maintenance and other skills needed to be a coxswain, 11 Indigenous participants passed the testing eight metre coxswain course.

CDU Lecturer in Maritime Studies, Milton Miller said the program delivered a wide range of training including driver education, coxswain training, survival at sea, and occupational health and safety.

below
In training for
an important job.

“The course equips participants with the skills to command, with safety and efficiency, a commercial vessel of less than eight metres and provides employment opportunities in the small vessel sector including tourism, commercial workboats, fisheries and aquaculture,” he said.

The course also achieved a national first with participant Ida Mamarika becoming the first Indigenous woman to qualify for the eight metre Inshore Coxswain Certificate.

Mr Miller said the course also aimed at meeting the need for coxswain training for students with limited literacy and numeracy skills.

“These are the people who will help guard our coastlines from illegal fishing and manage the environmental issues that spring up in some of the Territory's most beautiful, if inaccessible, areas,” he said.

“The training scheme is based on the concept that the best people to patrol the remote coastal fringes are the people who live on the coast – the ‘saltwater people’ – or traditional owners whose ancestors have been managing the environment in their own way for hundreds of years.”

Several course graduates are hoping to use their qualification to gain employment with Customs and join the frontline in patrolling the vast expanses of coast across the Territory.

○



Darwin: A creative hub in the tropics

Darwin has the potential to become a national leader and hub for creative innovation and inspiration, according to a recent project led by CDU's School for Social and Policy Research.

below

Associate Professor Tess Lea leads an examination of the NT capital's creative life.



Researchers from CDU, the University of South Australia and the University of Wollongong have mapped Darwin's creative industries including businesses based in marketing, advertising, music, film and television.

Ninety-eight practitioners were interviewed to help construct a local "map" of where they live, work and seek their inspiration. The map revealed several hotspots including the Darwin CBD, Parap and Winnellie.

Chief investigator of the "Creative Tropical City: Mapping Darwin's Creative Industries Project", Associate Professor Tess Lea said that Darwin's vibrant grass roots community also had a strong creative network, particularly with the NT's Asian neighbours.

"Identifying iconic creative spaces is important because these spots help generate and inspire the productivity that builds our reputation and presence," Dr Lea said.

"It highlights places that need to be recognised, protected and treasured."

Australian Bureau of Statistics information revealed that almost 2000 people were employed in Darwin's creative industries in 2006.

The CDU research report showed that this field employed significantly more people than mining (463), finance/insurance (1160) and various primary industries.

Dr Lea said Darwin could develop a more resilient economy and become less dependent on the Australian Government and resource sector by prioritising CDU's place in the community.

She said the University played a vital role in nurturing and developing creative minds.

"CDU feeds into the NT economy with graduates in key areas of design, new media, music technology and engineering."

o

Territory pioneer receives PhD at 84

At age 84, Judy Opitz has completed the highest academic honour. After 18 consecutive years of university study, the Territory pioneer has received a PhD from CDU.

Dr Opitz took her first steps into higher education in 1990 with an Arts degree majoring in archaeology and anthropology, followed by Honours which she completed in 1998. But her appetite for learning was far from satisfied, leading her to enrol in a PhD.

Her thesis compared the archaeological significance of two Australian Heritage sites – Tasmania's Port Arthur Penal Colony and the Territory's Kakadu National Park – and examined the ways the sites' archaeological histories were presented for visitors.

She said Kakadu visitors sought more in-depth knowledge of Indigenous culture, and wanted to know about the use and significance of the site to prehistoric peoples, not just about its present-day significance.

At the same time as working on her thesis, Dr Opitz wrote her autobiography entitled "An English Rose in Kakadu", which has been accepted by a local publisher. The book recounts her childhood in England where she was raised by nannies and governesses, to her search for adventure and subsequent voyage to Australia as a "10-pound POM" in 1959, and eventually to meeting her future husband and crocodile hunter hero, Tom Opitz, in the famous Darwin Hotel.

Tom worked at the Nourlangie Safari Camp as a guide, leading hunting parties for American tourists. In 1964 the couple built a store in Kakadu,

which later became the Gagudju Lodge Cooida, renowned for its Yellow Water boat cruises.

Now that she has finished her PhD, Dr Opitz has set her mind on studying philosophy.

She said education would always be important to her, and helping people access education was her current passion.

o



right

Dr Judy Opitz, 84, still hungry for learning.

Growing strong adults from early childhood

Quality early childhood education is critical to academic and social development. **alison elliott** explores the unique challenges facing the NT.

first person



text

Alison Elliott

photograph

Peter Eve

antennae

Alison Elliott is Professor of Education and Head of CDU's School of Education. She is recognised widely for her leadership, research, development and policy work in early childhood care and education.

The Northern Territory's unique social and geographic profile has resulted in a relatively small, but diverse and dispersed range of programs for young children. In metropolitan Darwin, early childhood services are much like those in other capital cities, albeit with staffing shortages that characterise many employment sectors. In more remote locations, children's services face a range of operational challenges associated with isolation and poor resourcing including difficulties in attracting qualified early childhood educators.

Research has long established the importance of the early childhood years to social and academic development. Culturally rich and nurturing environments provide optimal contexts for brain development and intellectual, physical and social growth. Positive early childhood experiences predict better academic achievement, school retention, and employment options and take-up.

Some of Australia's care and education provision is amongst the best in the world. We have "gold standard" early childhood centres but they are spread unevenly. In the mid-1990s we led the world in our national child care accreditation system, but this has struggled to accommodate the massive early childhood sector growth of the past decade.

The Federal Government came to office pledging to improve early childhood quality and create a world-class system of integrated early childhood learning and care. The aim is that by 2013, all children in the year before formal schooling will have access to quality, affordable, early childhood education for 15 hours a week, 40 weeks a year, delivered by degree-qualified, early childhood teachers in public, private and community-based preschools and child care settings.

This is no simple task. In the NT, as elsewhere, early childhood provision is patchy. There has been no integrated, whole-of-Territory or whole-of-community planning approach. And there is the tyranny of isolation. Sometimes, child care provision has been at the whim of commercial operators who focused more on shareholders' profits and property gains than building educational capital for children and families.

Across Australia, nearly one million children under school age participate in early childhood services and the sector is one of the nation's biggest employers. Some 50 or so child care centres in the NT catered for about 3092 children in 2006 (*Census of Child Care Services, 2007*). About half these were in the three-to-five age group. Some 19 per cent were four years old and many also attended Government preschools each week.

Child care centres range in size from 30 or so places to 75 places. A child care "place" may be occupied by more than one child because many children attend part-time. Child care also includes home-based, but supervised Family Day Care.

The NT has the highest proportion (34 per cent) of children attending child care full-time. This may reflect a combination of limited family support networks and greater full-time employment opportunities. Some 3272 children were enrolled in NT preschools in 2006: 1378 Indigenous children and 1894 non-Indigenous children (*DEET Annual Report 2006 – 2007*). The Productivity Commission's Annual Report for 2007 stated that nearly 80 per cent of eligible four year olds attended a preschool program in 2007.

Exact early childhood participation rates are difficult to determine because attendance data are collected in different ways and at different times, and there is no unique identifier for each child who enrolls. Counting is complicated because many children participate in more than one early childhood service. High family mobility also complicates counting.

There are two main types of services providing education and care to children from birth to five years of age in the NT: preschools and child care centres, sometimes known as early learning centres.

The Territory is a leader in preschool education. Most preschools are co-located on primary school sites and have administrative and educational ties to the school. Preschools, including mobile preschools, provide "sessional" education programs for four year olds for up to 12 hours a week. This will soon increase. In some cases, attendance is open to three year olds and, depending on family vulnerability, can be almost full-time. There is no limit to the number of preschool places the government funds but, understandably, provision of a preschool teacher is linked to minimum enrolments. This makes provision difficult in remote areas with small, highly mobile populations.

In addition to on-site preschools, mobile preschools operate in a range of very remote areas to service small communities. The mobile preschool visits each community for about two days a week. It is staffed by a qualified teacher (not necessarily an early childhood teacher) and on-site teacher assistants.

Child care centres are the second main type of early childhood service. Accredited child care centres enable families to access the Child Care Benefit, a subsidy to help parents afford the service. Most early learning centres are technically "child care centres". Some provide a strong educational program and employ qualified early childhood staff. At present, however, there is no requirement for NT child care centres to employ a qualified early childhood teacher.

Other types of early childhood services in the NT include Commonwealth-funded Multifunctional Aboriginal Children's Services and crèches. These "budget-based" services are primarily for Indigenous children, and are not required to meet normal national accreditation standards. They include long day care, playgroups, outside-school-hours-care, school holiday care and other culturally relevant programs.

The national diversity in early childhood service quality and access is polarised in the Territory. We have some of the



“The Territory is a leader in preschool education.”

best and worst services. The NT Government-funded preschools and the early learning centres attached to Catholic and Independent schools are among the best nationally and internationally. Unfortunately, some of Australia's most problematic early childhood services are also in the Territory, especially in remote locations. They are housed in dirty and neglected facilities, with limited staffing and resources. Some sit outside the national child care accreditation scheme so there is little quality control.

Extreme staff shortages across the sector nationally are exacerbated in remote locations. Not surprisingly, families and children don't want to participate in poor-quality early childhood services, so some centres sit virtually empty.

The NT Government strategy, *Closing the Gap of Indigenous Disadvantage: A Generational Plan of Action* (Aug 2007) addresses specific challenges that affect Indigenous Territorians. *Closing the Gap* strategies include improving early educational outcomes for all Territory children and enhancing developmental and educational outcomes for Indigenous children. Strategies include additional targeted early childhood services including mobile preschools.

The formation of an early childhood division in the NT Department of Education and Training, movement of child care administration to the NT Department of Education and Training, the assent of the *Care and Protection of Children Act* and a new Children's Commission should all boost early childhood provision, access and quality.

The high proportion of young children in the Territory makes quality early childhood especially important. NT communities are the most youthful in the country. In June 2007, 51,800 children (24.1 per cent) were aged 15 years and under from the NT's population of 218,000 overall. There were an estimated 3642 four year olds. Some 40 per cent of NT children are Indigenous and the Indigenous population is growing at twice the annual projected rate for the wider Australian population. By 2013 Indigenous children will comprise 50 per cent of all Territory children.



Charles, My Hero

The man who changed a world view

Charles Darwin is my hero because he accomplished so much that is so important. By changing the way humans view their place in nature, he created a paradigm shift, a very rare event in the history of science: the replacement of one world view by another.

The shift from creation to evolution has moved intellectual endeavours from untestable belief to rational understanding that flows from the scientific method. This, in turn, has allowed a staggering array of advances in knowledge. Darwin is considered one of the most influential scientists who ever lived because the theory of evolution is one of the most powerful ideas in science and may well be the greatest idea ever had by the human mind. Darwin supplied an explanation for the great diversity of life and showed that all life, including human, is related by descent from a common ancestor. No other biologist has had an impact of this magnitude.

The elegant simplicity of Darwin's reasoning can be distilled as follows. There is variation in nature and many more offspring are generated than can survive, therefore there is a struggle for survival in which favourable variations are preserved and unfavourable variations are removed. This process leads to evolution which he defined as "descent with modification" and to speciation, the formation of new species. Since nature is doing the selecting for the forms best adapted to a particular environment, he called the process natural selection as opposed to artificial selection that is imposed by breeders. Darwin borrowed the expression "survival of the fittest" from economist Herbert Spencer. Evolutionary fitness means reproductive fitness. In modern terms, the fittest is the one who gets the most genes into the next generation, not necessarily the biggest or strongest individual.

text

Tim Berra

photograph

Courtesy Tim Berra

Darwin drew the first evolutionary tree showing the relatedness of all animal life (1837). He explained how coral reefs form (1842) and contributed to geological observations on earth movements (1844) and the deformation theory of metamorphic rock (1846). He described all known barnacle species, fossil and living (1851-1854). Darwin explained how orchids are fertilised by insects (1862) and how plants climb (1865). He introduced the "control" in "controlled experiment" and he catalogued the variation in domestic plants and animals (1868). He explained human origins and sexual selection in ways never before articulated (1870-71), and discussed human and animal emotions (1872).

The latter work was one of the first books to use photographs. Darwin showed how insectivorous plants growing on impoverished soils utilise nitrogen-rich insects (1875), and he demonstrated that the offspring of cross-fertilised plants were more numerous and vigorous than self-fertilised ones (1876, 1877). His observations of climbing plants laid the foundation for the field of plant growth hormones (1880), and his work on earthworms (1881) is a classic study in ecology. Any one of these achievements could constitute a life's work for most scientists. Darwin accomplished all of this with grace and dignity. He was a devoted husband and father, and his personal life was a model for emulation.

tim m. berra is Professor Emeritus of Evolution, Ecology and Organismal Biology at the Ohio State University, Research Associate at the Museum and Art Gallery of the Northern Territory, a two-time Fulbright Fellow, and author of six books including *Charles Darwin: The Concise Story of an Extraordinary Man*.



antennae

Professor Tim Berra will be keynote speaker at the Charles Darwin Symposium in Darwin from 22 - 24 September 2009. Titled *Charles Darwin: Shaping our Science, Society and Future*, the Symposium celebrates the 200th anniversary of Charles Darwin's birth and the 150th anniversary of the publication of *On the Origin of Species*. W.cdu.edu.au/cdss2009.



CHARLES DARWIN UNIVERSITY
on the move



'Blokey' NT image may be a myth

The issue of population in Australia is nowhere as important as in the Northern Territory. **kate golebiowska** is working to understand one sector of the NT population: overseas-born migrants.

text

Robyn McDougall

photograph

Peter Eve

With a landmass of almost 1.4 million sq km, the NT represents one of the largest regions in the nation, but it has the smallest population - nudging just 220,000 people. This relatively small pool of people available to the Territory's workforce and economic development highlights the need to understand the make-up of the population.

A Research Associate with CDU's School for Social and Policy Research (SSPR), Dr Kate Golebiowska, has recently investigated immigration and employment experience of overseas-born nurses and midwives in the Territory. This sector of the workforce relies on recruiting overseas-trained professionals: in November 2007 about 13 per cent of this workforce in the Territory was overseas-trained.

far right

Kate Golebiowska

From this initial interest, Dr Golebiowska has broadened her research to study the characteristics of international migration in the NT. She began her one-year, ground-breaking study in August 2008. "Essentially, I'm trying to identify what happens when overseas-born migrants come to the Northern Territory and what demographic and economic impacts their presence here have," she said. "Do they stay put, move around the Territory or move interstate? Finding answers to these questions will help to understand their role in the population growth of the Territory, which has typically been volatile."

Immigrants form a sizeable portion of the Territory's population. The most recent national Census (2006) by the Australian Bureau of Statistics (ABS) shows that some 22 per cent of Territorians were born overseas. Further, in the week before the last Census was undertaken, 94 per cent of eligible Territorians were engaged

in work, suggesting that immigrants are critical to a robust NT economy, see W: www.censusdata.abs.gov.au.

Dr Golebiowska expects the results of her study will have twofold benefits. "It will help to fill in the gaps in the academic literature. In national publications, the NT rarely gets a lot of attention (because of a paucity of information), but more detailed answers should be able to be offered after this study," she said. Just as important, the research results will help to gain further insights into the regional dispersal of immigrants in Australia.

The study complements the work of SSPR's Population Studies Group which has studied, among other aspects, the mobility of Indigenous and non-Indigenous Territorians, and has produced population projections for the NT. Dr Golebiowska is drawing on unpublished Census data from the ABS, unpublished information supplied by the Federal Department of Immigration and Citizenship, and interviews with immigrants now living in Darwin and Alice Springs, to describe the volume of people coming to the NT from overseas including their ethnic origin, age, occupation and gender and visa type. She will compare these with figures from the rest of Australia.

Preliminary findings related to gender suggest that the image of the NT being "male and blokey" might need to be revised. "Analysis of the 2001 Census data shows that immigration into the NT is mostly women. I'm looking to see if the 2006 Census trends are the same. If the trend is confirmed in 2006 Census data, it could change perceptions of the NT," she said.

"I've found that the immigrants are coming for many reasons: to take up employment as skilled migrants, as family migrants and as refugees. We have the full spectrum in the NT," she said.

But how immigrants come to choose Darwin, Alice Springs, or the NT for that matter, may not be the immigrant's sole decision. Australian Government policy states that skilled immigrants entering the country on a temporary long-term 457 visa (which grants temporary residence for up to four years and requires a minimum two-year employment contract from the sponsoring employer) are required to remain in one location for the two-year duration of their job.

"When overseas-trained nurses sign up with nurse recruitment agencies, which are popular among those educated in Africa, they're made an offer and generally take the first offer. It's a matter of chance whether they end up in Canada, New Zealand or Australia", or Alice Springs or Melbourne, if they choose to come to Australia.

web byte

For more information on the work of the SSPR Population Studies Group, see W: www.cdu.edu.au/sspr/populationstudies.



Dr Golebiowska's initial analysis of the Census statistics shows that the NT attracts more immigrants from south-east Asia than does Australia as a whole, which should not come as a surprise given the Territory's proximity to the region.

"But in comparison to the rest of Australia, we are also getting proportionately slightly more African immigrants, not from the north, but from other African countries," she said. While South Africans dominate in the national arena, in the NT it is Zimbabweans who dominate. The African immigrants may be attracted by the relatively strong Australian economy and the comparative safety of society.

Immigrant nurses and midwives from Zimbabwe who she interviewed said they would consider moving back to their home countries, but only in a family emergency. "They said they would not consider going permanently. Australia is home now." Most were interested in becoming Australian citizens.

Dr Golebiowska said many Alice Springs nurses arrived in the NT on the temporary 457 visas. "Most are happy to get away from Africa," she said. "Some nurses from Africa are told by the recruitment agencies that Alice Springs is much the same as Africa, but the nurses report that it is much hotter!" she said.

While some developing countries are concerned about the exodus of skilled professionals, others view skilled emigration as an opportunity. "Some institutions in the Philippines have made an industry of training nurses specifically to work overseas," Dr Golebiowska said. "They follow the US curriculum for registered nurses which is aimed at facilitating their employment there." As a result, remittances have become a big part of the Philippines economy. Likewise, many African-born nurses working in the Territory support their families in their homelands.

Dr Golebiowska said she hoped her research would seed further opportunities for both the immigrants and the Northern Territory.



On the move

Kate Golebiowska has been more or less on the move since age 15. As a teenager in her native Poland, she spent many summer breaks taking up scholarships to study Italian in Italy, French in Switzerland and English in Scotland. But it wasn't until she undertook her Masters in political science at Warsaw University and wrote a MA thesis on international migration in Europe, in which she included a chapter on Australian immigration, that her interest in the area was fuelled.

In 2002 Kate moved to Canberra to take up a PhD scholarship at the Australian National University. It was here, at her first day at ANU that she discovered a distant family member working in the same building. The relative had been separated from the wider family by almost 50 years and 15,000 km. The discovery underscored the poignancy of emigration.

Once she submitted her thesis in 2006, Kate was free to move to Darwin where her partner lives. Now she looks forward to joining other overseas-born immigrants later this year in taking her citizenship test. And there are few would-be citizens who are happier that the cricket questions have been removed from the Australian test.



Digesting crocs' secrets – from the inside out

Crocodiles are ancient creatures that have survived environmental catastrophes over the millennia.

And many of the characteristics that have allowed them to survive into the 21st Century are only now beginning to be understood.



Most of the world's crocodylians are threatened or endangered, and although Australia's two species of crocodiles have enjoyed three decades of population growth since they were protected, these species too face new challenges to their survival, including the effects of climate change and invasive species such as cane toads.

Professor Keith Christian and Dr Chris Tracy, from CDU's School of Environmental and Life Sciences, have joined with Professor Grahame Webb and Charlie Manolis, of Wildlife Management International (WMI) and Crocodylus Park, in two projects to investigate the unique adaptations of crocodiles and their susceptibility to environmental disturbances.

The first project, funded by the Australian Research Council (ARC) in conjunction with the Innovation Board of the Northern Territory Government and WMI, is examining the digestive physiology of crocodiles with a long-term goal of improving growth rates of captive animals in the crocodile farming industry. To achieve that aim, however, the researchers are investigating the underlying physiology and behaviour of crocodiles related to their digestion.

Using recently developed techniques that measure the way nutrients pass through the intestines, the researchers have discovered that crocodiles have a surprising ability to absorb nutrients passively across the intestines. Passive absorption (as opposed to active transport) requires no energy, and thus has some advantages.

The extent of passive transport in crocodiles is comparable to that found in birds and bats – animals that have very high energy requirements. This unexpected result may be related to the fact that crocodiles and birds share a common ancestry, or, alternatively, it may be related to the fact that the preliminary measurements were all made from fast-growing juvenile animals.

Experiments planned for this year will involve larger and, therefore, slower-growing crocodiles in an attempt to further

text
Richie Hodgson





It is well established that crocodiles can die after eating a cane toad, and since both crocs and toads inhabit the edges of waterways, it seems a forgone conclusion that toads will decimate freshwater crocodile populations.

understand the pattern revealed by the initial experiments. Either way, the results will provide new insight into the inner workings of crocodiles, and ultimately these insights may be able to be exploited to produce an improved diet for captive animals.

A second project, which will begin mid-year, pending a successful ARC application, will examine the effects of cane toads on populations of freshwater crocodiles.

It is well established that crocodiles can die after eating a cane toad, and since both crocs and toads inhabit the edges of waterways, it seems a forgone conclusion that toads will decimate freshwater crocodile populations.

There are, however, several complicating factors. One factor relates to the main predators of freshwater crocodile eggs, goannas, being poisoned by toads. With fewer goannas around, many more hatchlings may be produced, even if larger crocodiles were to die as a result of eating toads. Determining the balance between these opposing forces is one of the aims of the new project.

Another complicating factor is related to apparent differences in the susceptibility of freshwater crocodile populations to cane toads – at least based on preliminary observations.

Drs Jonathan Webb (formerly of CDU) and Mike Letnic, of the University of Sydney, recently documented high mortality among freshwater crocodiles soon after the invasion of toads in the NT's Victoria River. Similar observations have been made in other rivers, including Katherine River. But preliminary observations in McKinlay River suggest much less mortality.

Although a thorough survey of McKinlay River has not been carried out since the arrival of toads (that will be the top priority if the ARC funding is successful), a survey of nests found no reduction after the arrival of the toads, suggesting that female numbers have not declined.

Variability among populations in various river systems may be caused by any number of factors, such as the ability of individual crocs to learn not to eat toads, the speed at which populations may evolve to learn to not eat toads, or pre-existing differences among populations in their propensity to eat frogs and toads. The latter possibility could relate to the fact that there are some native frogs in some river systems that are also toxic, raising the possibility that crocodiles in those areas may have a long-established aversion to eating frogs. These are among the various possibilities that researchers hope to investigate over the next few years.

The freshwater crocodiles in McKinlay River will be an important part of the study because of the long-term population data that have been collected since the 1970s by WMI staff.

Analyses of the population structure, size-dependant survivorship, and reproduction before and after the cane toad invasion will result in one of the most comprehensive population studies of any long-lived reptile. In a sense, the invasion of cane toads and their effect on crocodile populations is an evolutionary experiment on a grand scale – the sort that crocodiles have, so far, endured over the millennia.

At home where two worlds collide

His students are considered “wild boys” and a hard group to crack, but Alice Springs lecturer **wayne barbour** is right at home among them.



text

Jason McIntosh

photograph

Jason McIntosh

above

Wayne Barbour

The Conservation and Land Management Lecturer has a special link with his students who are located in Tennant Creek, 500km north of his Alice Springs base. Wayne, who is of eastern Aranda descent, returned to his Central Australia birthplace which he left when he was removed from his family as a five-year-old and placed in Retta Dixon Homes in Darwin, managed by the Aboriginal Inland Mission.

The challenges of Aboriginal identity and the confusion of not belonging were elements of Wayne's life, but at a young age he also developed a passion for the environment and eventually became a highly successful cultural and natural land management specialist.

The land has been a consistent theme throughout his career which has included working in Top End Indigenous communities as a ranger co-ordinator, a stockman on cattle stations and as an Indigenous land management facilitator.

It was after relocating to Victoria in 2006, however, that Wayne soon felt an urge to return home. “There was an overwhelming and spiritual desire to go back to my ancestor country,” he said.

About the same time, a lecturing position at CDU's Alice Springs campus captured his attention and in late 2006, Wayne returned to Central Australia with his family.

“It was an excuse to return home and do something for my people, and to introduce my children to their Indigenous heritage which is so important for their life journey,” he said.

Wayne's first formal lecturing position involved a steep learning curve, but he said he has found great pleasure in helping his people and reconnecting with his family which is spread across Central Australia.

“I had to be myself and deliver subjects from their perspective. I found my cultural connection with these men made a huge difference,” he said.

This meant adapting his experiences and knowledge of Indigenous people in his backyard of Northern Australia to those in Central Australia.

“At first, it was a challenge. I had to think in a desert way and let go of my Top End experience, but once they got to know who I was the process changed because we developed the respect between us,” he said.

“Weed spraying is a classic example because to them (Indigenous people) killing plants doesn't make sense, some of them have a cultural value.”

His solution was to explain that dangerous bushfires were more of a threat to bush tucker. “It's all about final delivery and fitting education into the world they live,” Wayne said.

And the results have been impressive. His first group of Certificate I in Conservation Land Management students last year registered a 96 per cent pass rate. Many of them are now working with Wayne to complete their Certificate II in Conservation Land Management.

He said he was thrilled to see the efforts of his students, many of whom are his direct relations. “It gives me such a great feeling to see them work so hard,” he said.

o

right
Conservation Land Management students in Tennant Creek Tony Junior Cutta (left) and Corey Hogan get to work.



Whale shark's wayward journey

Marine scientist **mark meekan** had the feeling that something was amiss when the five-metre-long whale shark he was tracking via satellite suddenly appeared to be heading inland.

Dr Meekan, of the Australian Institute of Marine Science in Darwin, had been following the movements of the enormous fish for months on its 4000km journey from Christmas Island, 500km south of Jakarta in Indonesia, across to West Papua, and back south again.

The high-tech tracking tag on its back was collecting important new information about these mysterious giants - the world's largest fish - which can migrate up to 12,000km and are under threat from ocean-going vessels in Asia which harvest the sharks for commercial purposes.

But out of the blue, the shark's journey stopped abruptly just off West Timor.

Dr Meekan recalled how he realised with dismay that the tag, and perhaps the whale shark, had ended up on a remote beach. Then, to his surprise, the tag began to move inland.

"I could follow its path to a village and I could see it was sitting in a house," Dr Meekan said.

After overlaying the signal on to Google Earth maps, he quickly launched a rescue operation for the device because "the data it contained was absolutely invaluable".

A research associate at Charles Darwin University, Conrad Speed, went to the far-flung village about three kilometres inland, pinpointed the house and offered a reward for the \$4000 tag's return.

"A local villager looking for turtle eggs had found it on the beach," Dr Meekan said.

White scratch marks on the blue surface revealed the tag probably had been ripped from the back of the gentle whale shark by another shark and then washed ashore.

Very little is known about the behaviour of whale sharks in the open ocean. But the record stored on the recovered tag revealed that the gigantic fish had dived to depths of more than 1000 metres.

"It's extremely dark and very cold down there, less than 10 degrees," Dr Meekan said.

Scientists are concerned that the average length of whale sharks at Ningaloo Reef in Western Australia has dropped from seven metres to five metres in the past 10 years.

Numbers have also declined, with collisions with vessels a likely source of deaths.

With West Australian Tourism relying heavily on the whale sharks drawing thousands of visitors to Ningaloo Reef every year, debate on how to best address the declining numbers has become more intense.

"About 25 per cent of the animals at Ningaloo have scars that could be attributed to boat strikes," Dr Meekan said.

Understanding more about their movements and slow reproductive biology were the keys to their protection.

"For such a rapid decline to be observed in such a long-lived species suggests a strong mortality source," he said.

Fishing in Asia is also depleting numbers and researchers have established a project to help develop small ecotourism operations in Indonesia to preserve the ocean giants.

"We see that as one of the most useful ways to ensure the future of the animals," he said.



photograph
Courtesy Rob Harcourt

text
Richie Hodgson



Left
Ruby Yarrowin in the 1960s

Karrabing: keeping country live

In 1984, young American student **elizabeth povinelli** travelled to Darwin to study the economic practices and political views of Indigenous women. She has returned every year since.

text
Shane Thamm

photograph
Courtesy Linda Davis

below
Ruby Yarrowin
with her family

With an entire continent to choose from for her research, Elizabeth Povinelli set off for Belyuen, an Indigenous community on the other side of Darwin harbour.

It was the first step toward becoming Professor of Anthropology at Columbia University, New York City, and adjunct Professor at CDU. But she didn't know that at the time, nor did she know anything about Belyuen or anthropology then.

"I knew nothing about Australia other than what I had seen in movies. And I arrived in Darwin by chance, a chance heavily mediated by the regular routes of airline flights," she said.

Some 25 years on, Professor Povinelli continues to work closely with three Indigenous families. Together they are developing a unique method of archiving the social, historical and cultural knowledge of their traditional land in the Anson Bay region southwest of Darwin. Their project is called *Karrabing: keeping country live*.

Karrabing is an Emiyengal word that refers to the tide's final ebb before it returns, and reflects the families' hope to discover a way of life that joins Indigenous and non-Indigenous aspirations.

Ultimately, *Karrabing* will become a real-world library, where information is literally embedded into the landscape. Future visitors will be able to use mobile phones to photograph two-dimensional barcodes placed on the land, which will prompt the phone to download a webpage. They might view videos or recordings of ancestors discussing the site, discover local environmental knowledge, or for the adventure tourist, information about good places to fish and hunt.

Professor Povinelli continues to record their cultural histories to ensure the families have the personal resources to make *Karrabing* work, and to establish a sustainable life at Anson Bay. She remains a constant voice of encouragement for them to gain essential skills. Some of the people already have certificates in welding, carpentry, and power and water management, but what they don't have is money or physical resources, something *Karrabing* could provide if it has an economic flow-on effect. If the concept succeeds, the families hope to develop a tourism business, or have it adapted for use at tourist Meccas around the globe as a "live guide" embedded into the destination.

Of equal importance to the families is the opportunity to reconnect with their land after a generation of separation. In the 1930s, Ruby Yarrowin and her parents' generation were the last permanent residents of southern Anson Bay. They moved north to Belyuen, then were forcibly interned at the Katherine Aboriginal war camps during World War II. They fled because of the violence and walked more than 200 km back to Anson Bay. After the war, they returned to Belyuen where Ruby married and raised her children and grandchildren.

In 2007, her extended family fled Belyuen because of violence and they are now seeking to return to the place where this long journey started. Linda Yarrowin, daughter of Ruby Yarrowin, said the happiness of their children was central to their desire to make life on their land work.

"When you are there you feel your grandparents, your people walking around. You want your children to be there," she said.





text
Row Booker

photograph
Peter Eve

above
Bill Wade

Nomad finds a home in e-learning

As an adventure-seeker and nomad by nature, it came as no surprise to Canadian-born **bill wade** to find himself living in the Northern Territory's Top End.

From an early age, the newly appointed Associate Professor and Head of the School of Creative Arts and Humanities caught the wandering bug, inherited no doubt from his father who worked in international construction.

His father's career dictated that the young Bill Wade would spend his formative years far from his native Ontario.

At the tender age of 12, Bill lived in Iran while his father trained locals in the production of pulp and paper. Later the family relocated to Israel, again following his father's work this time in aircraft hanger construction.

And his global odyssey continued into adulthood with Bill and his young family now calling themselves "Territorians".

Similarly, the seeds of his career path grew out of his own educational experiences as a youngster and his life-long passion for the creative and performing arts as a musician, audio engineer and producer of numerous CD projects and multimedia titles while working in Canada's Northwest Territories.

"I was schooled entirely by distance education for both Year 8 and Year 11 while I was living in the Middle-East," Bill said.

"Later in life I again studied externally to complete my Master's in Distance Education at Canada's University of Athabasca, so through my 10-plus

years of self-directed distance learning, I have become a huge advocate for its merits."

First and foremost Bill describes himself as a teacher by profession. He began his career as a primary schoolteacher before transitioning out of the classroom to chair teacher education programs for Canada's Northwest Territories.

In 2006 he moved the 22,000 kms from the Northwest Territories of Canada to Darwin to take up a lecturing post at Charles Darwin University.

Since arriving at CDU, Bill has immersed himself in the fields of creative arts, new media, distance education, flexible and online learning, and e-learning in general, an interest he attributes to his own experience as an external student.

"I'm passionate on the merits of e-learning and have written articles, papers and delivered numerous presentations promoting its worth as an educational strategy. Evidence proves that it can further engage youth in the creative arts and go some way towards levelling the playing field in terms of closing the gap on educational disadvantage," Bill said.

For more than 20 years, Bill has championed how technology can enhance the teaching and learning experiences of both teachers and students

In 2000 his work as both an educator and researcher was recognised with the Canadian New Media Educator of the Year award and in Australia he is fast gaining recognition in the field of e-learning through his coordination of the annual distance education technology conference MobilizeThis.

Since arriving at CDU, Bill has won the respect of his colleagues and peers, being named the CDU 2008 Champion of the Year for Teaching and Learning Leadership for the Faculty of Law, Business and Arts.

He also has a vested interest in opening critical discourse and debate on "innovation tensions", which he explains as the juxtaposition that exists between ICT systems needing to offer safe environments for students and VET or Higher Education educators wanting to use innovative technologies and to engage in "authentic innovation".

He is currently analysing a pilot implementation of CDU's e-portfolio system, which is designed to engage students in self-directed learning and he is working towards providing guidelines and suggestions for implementing this system within the School of Creative Arts and Humanities and broader CDU, HE and VET sectors.

web byte

Visit the annual distance education technology conference MobilizeThis at W: <http://mobilizethis.wikispaces.com>. See Associate Professor Bill Wade's recent lead article in the Knowledge Tree on innovation tensions W: <http://kt.flexiblelearning.net.au>.

Way forward in PNG's maternal mortality crisis

After walking for eight hours, a woman bleeds to death with a newborn child in her arms at the entrance of Goroka hospital in Papua New Guinea. She dies because she doesn't have 10 Kina (A\$5), the hospital's admission charge.



This death at Goroka occurs in spite of national policy that states that all maternity care should be provided free of charge. But if hospitals failed to charge patients, they would have even less capacity to care for them.

This is the desperate situation of maternal mortality that PNG faces, a crisis that continues to cripple the country's health system.

A wet and dreary October morning in Port Moresby marks the beginning of a one-week workshop with representation from all Papua New Guinea's midwifery teaching institutions, health department and other stakeholders.

This was the third visit by World Health Organisation (WHO) consultant and Charles Darwin University Associate Professor – Child Health, Sue Kruske, to help to address the desperate situation of maternal mortality experienced by Australia's northern neighbour.

To say the country's maternal services are in a poor state would be an understatement of epic proportions.

In 2008, a number of events occurred in PNG that highlighted the escalating problems within the country's maternal services. The most significant was the release of maternal mortality estimates contained in the latest Health Demographic Survey results which indicated a more than twofold increase in the PNG maternal mortality rate from 370 to more than 730 per 100,000 in the past 10 years. The estimates rank PNG among the worst in the world for maternal mortality.

It was Dr Kruske's assignment to help stakeholders to improve the quality and content of the midwifery curricula across four teaching schools involved in midwifery education in PNG.

In December 2006, Dr Kruske led a comprehensive review of the country's midwifery education. A total of 30 recommendations were made to improve both quality and content. A new curriculum across the four schools was among the recommendations.

The following year, she returned to develop the new curriculum, based on the international WHO curriculum, and dramatically redesign the current programs across the country. Major changes included separating pediatrics from the midwifery program, increasing the midwifery content and increasing the duration from 44 weeks to 52 weeks.

This draft curriculum was left with the schools to modify to their own needs. However, with the exception of one which implemented minor changes, there were limited resources to apply the new program across the schools, she said.

When the latest maternal mortality figures were released in 2008, Dr Kruske was invited to continue developing the new curriculum. This involved designing and developing eight new subjects that included both the traditional components of midwifery practice and contemporary material considered essential for effective midwifery practice in PNG. New material included public health, epidemiology and the sociological influences of maternal health and well-being.

"The quality of education provided for the preparation of midwives has a major influence on the ability of health

services to provide skilled care for women in pregnancy, childbirth and the postnatal period," Dr Kruske said.

Currently, there are insufficient midwives in PNG and the number being trained still won't come close to addressing the workforce shortages.

With so many contributing factors to the poor state of maternal and child health in PNG, a workable solution seemed almost impossible, she said. "Women have very poor status in the country, particularly in rural areas. Infectious diseases such as HIV are reaching endemic proportions and the health service infrastructure has slowly been eroded in the past 30 years. Stakeholders estimate that up to 50 per cent of rural health facilities have closed in the past 30 years.

"Poor maintenance of health facilities has affected the ability to attract and maintain staff, and provide high-quality and safe care.

"Even essential medical supplies and equipment were often unavailable even though the central warehouse had supplies available."

Dr Kruske said many women did not have access to health services for care during pregnancy and childbirth because of their geographical isolation.

PNG is ruled by its geography, with only a handful of bone-jarring, snaking roads crossing the mountain ranges to link key centres. Electricity and sewerage services struggle to reach even large towns, and lack of infrastructure dictates that 85 per cent of the population still eke out a living as subsistence gardeners.

For millennia before the arrival of Western civilisation, tiny populations were hidden from one another in walled-off river valleys or clinging to treacherous mountain slopes, fighting fiercely against their neighbours. This caused thousands of unique communities to evolve, each with their own rich customs, traditions and languages.

Today, more than 800 distinct languages are spoken in PNG, around one-third of the world's total, and most are spoken by only a few hundred people.

The Highlands were the final frontier of PNG to succumb to Western exploration and many of the elderly still remember the customary lifestyles they led before being introduced to Europeans, coffee plantations, Coca Cola and Christianity. Within one generation, these people witnessed the transition from stone axes, digging sticks and grass huts to four wheel drive vehicles, satellite communication and the Westminster system of government.

Providing health care to such a fragmented and diverse population has always been difficult, and indicators of PNG's health status, such as child and maternal mortality rates, have consistently rated among the bleakest in the world. In the 1960s, 20 per cent of children born in PNG died before their fifth birthday, Dr Kruske said.

"But impressive improvements were made in the 1960s and 1970s. An efficient health outreach program was established with aid posts in remote areas staffed by health extension

officers who administered basic medicines and care."

Maternal and child health patrols regularly walked to remote villages to provide education, antenatal care and vaccinations. By 1982, 93 per cent of the population lived within a two-hour walk of a health care facility and the child mortality rate had nearly halved from 20 per cent in 1960 to around 11 per cent.

But progress in PNG's health status has declined over the past 30 years.

text

Richie Hodgson

photographs

Courtesy Associate Professor Sue Kruske

Progress in PNG's health status has declined over the past 30 years.

To reverse this trend, a Ministerial Taskforce on Maternal Health has been established and is reviewing a large number of submissions before making recommendations to the Minister on a proposed way forward.

The one-week workshop in Port Moresby during October 2008 offered a holistic approach to addressing PNG's maternal mortality crisis.

"Considerable work remains to develop readings, lectures and various other teaching materials," Dr Kruske said.

"It is estimated that, of the new curriculum, approximately 60 per cent can be sourced in existing materials, but these materials require full revision and updating.

"The remaining 40 per cent consists of new material and teachers have identified that they do not have the capacity to introduce this new material without assistance."

There is now a high-quality, contemporary, PNG-contextualised midwifery curriculum available for implementation across PNG. If implemented carefully with the correct support and realistic timeframes, Dr Kruske said she expected significant improvement in the quality of midwives graduating.

far left above

Sulpain Passingan, from PNG's Department of Health, and Dr Sue Kruske at the Bomana War Cemetery.

far left below

A typical postnatal ward in PNG offers sub-standard facilities for mothers and their babies.

Art returns Robyn's stolen heart

Before falling asleep, young **robyn mcinerney's** thoughts would drift into the world that lay within an old suitcase beneath her bed. It was here that the threads of her identity were held and the place from which her healing would begin.

photographs

Jason McIntosh

text

Jason McIntosh

Always near her side, the crayons, paints and paper inside the suitcase under her bed gave the young Robyn McInerney solace among the unsettling foster homes, orphanages and state care of her childhood.

More than 50 years later, the Charles Darwin University Alice Springs-based Bachelor of Visual Arts student continues to use her formidable artistic talent to expose the crisis of self-identity and to close wounds she accumulated while lost between Indigenous and white worlds.

below

Robyn McInerney

Born near Oodnadatta, in South Australia's far north, to an Aboriginal mother and white father, Robyn's life was marked by upheaval. She lived with foster families across Australia and Papua New Guinea as a child, moved to Denmark as a young woman with her then husband, and many years later returned to her roots in Central Australia.

Robyn's recent exhibition in Alice Springs, titled "Shattered lives", attracted local acclaim, but beneath the vibrant paintings and sculpture was a woman trying to reconcile her past. It followed an earlier exhibition, titled "Bucket and brush", which represented the punishment of cleaning toilets while in children's homes.

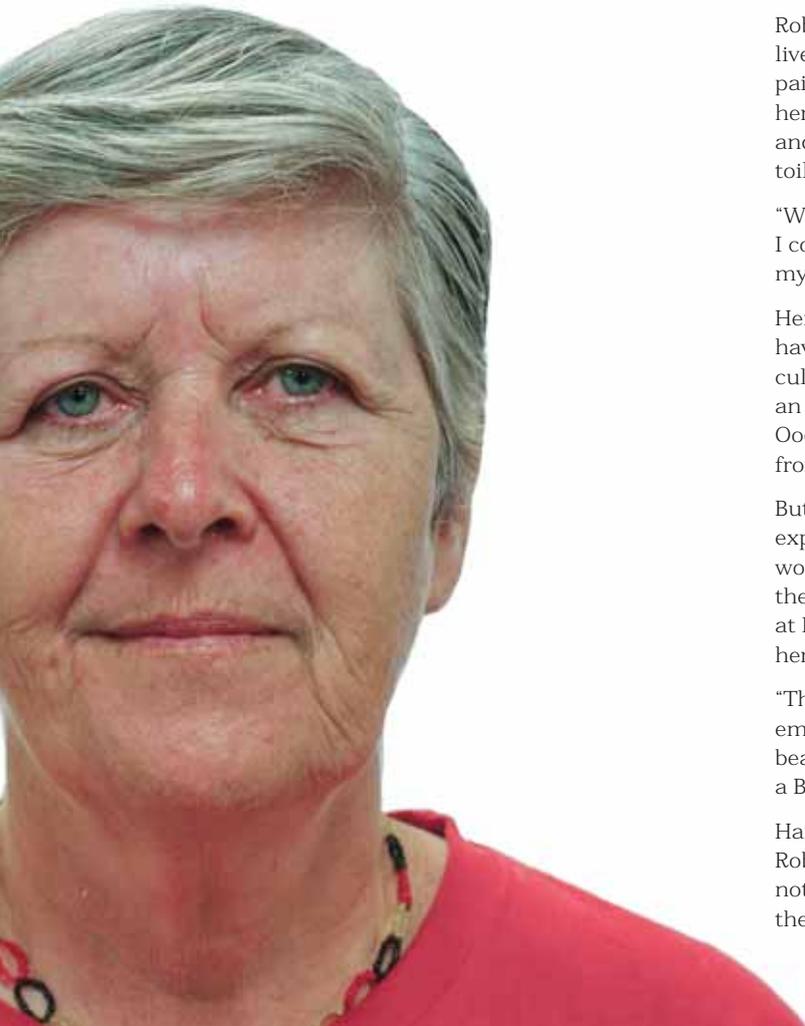
"When I first did the installation I was crying inside, but as I continued with it I realised it made me feel good about myself," she said.

Her story echoes those of many Indigenous Australians who have been caught in the abyss between black and white cultures. Robyn's life of upheaval started when she was an infant and placed in the United Aboriginal Mission at Oodnadatta. At age six, she and three siblings were taken from the town and sent to a foster family in Adelaide.

But when her foster parents announced that they were expecting a child of their own, Robyn was removed. Her new world within Evangelistic Baptist families saw her move up the eastern states and later to a Christian Aviation Mission at Daru in Papua New Guinea. One of her clearest memories here was of propeller planes roaring in. She was now 11.

"The locals used to tell me they were 'mixmaster belong-em gods' in their pigeon English, named after the kitchen beaters," she said. "I remember my age because they gave me a Bible for Christmas and it was dated 1960," she said.

Handed to yet another white PNG-based foster family, Robyn was soon returned to New South Wales at short notice. Literally dumped in the state, she was taken on by the government.



“I got so institutionalised, I cried when I left.”

right
An early record of
Robyn McInerney's identity

“I didn't want to go back to Adelaide because it wasn't my home, so the courts declared I was a ward of NSW,” she said.

After another round of children's homes, Robyn was sent to a Sydney reformatory where she found solace without either foster parents or religion dictating her life.

“I felt free from a family unit where I didn't belong and had friends that became my siblings,” she said. “I got so institutionalised, I cried when I left because I liked the routine and felt a sense of belonging, but the other kids thought I was crazy wanting to stay because they were trying anything to get out.”

Many years later, Robyn gained access to government files that revealed a trail of lies about her background and heritage. “That really hurt me to think these people wrote these things that weren't true about who I was and where I was from. It really tore me apart,” she said.

“They warned me not to read it on my own because it was so full of lies and I was so depressed about that because half the time they just made it up.”

With no record of her birth and the use of adopted family names during her schooling, Robyn has always struggled for identity. “They gave me a certificate of citizenship that migrants get when they come to the country and I think, you know, I've been living here all of my life with an Aboriginal mother which is a total insult,” she said.



At age 18 she finally escaped when she met and married a Dane, but this also involved another battle through the court system with the help of Aboriginal Legal Aid. “The government gave me permission to marry and I was off,” she said.

After living in Denmark for seven years and mastering Danish, Robyn said her anxieties grew and she took the tough decision to return to Australia. Soon after, she met her mother in Alice Springs following a 20-year separation – a momentous occasion she cherishes. “My mother has now passed away, but when I walk the (Todd River) bridge to university I feel that she is there,” she said.

After flirting with various careers, Robyn said studying for a Bachelor of Visual Arts at CDU was giving her a “way forward” and helps her to share her stories with others.

She said it was equally important for traditional Aboriginal people to understand the stolen generation just as it was the wider society. “It's great when they come in from the communities because many relate to being downtrodden, but they don't always understand the stolen generation,” she said.

Robyn is inspired by the likes of painter Richard Bell and photographer Tracy Moffat who can carry their messages so well. “It inspired me to tell my story and I was so happy to see others appreciate and admire my work,” she said. “It's part of my healing process that makes me stronger.”

This new strength will help Robyn to face her memories as she visits her birthplace after more than 50 years. “My last dream is to go home and I feel my life is complete and it will make up for all the years I was away; like the last piece of my life's jigsaw.

“My life will be complete when I return home,” she said.



In the path of a cyclone

Steeled by the experience of living through the devastation of Cyclone Tracy, **greg holland** has taken his expertise in meteorology far beyond Australia's northern waters.

text

Richie Hodgson

photographs

Courtesy Dr Greg Holland



above

Dr Greg Holland

far right

The aftermath of Cyclone Tracy in Darwin.

Dr Greg Holland has researched and studied tropical cyclones and related severe weather for much of his life, and is considered one of the preeminent authorities in his field. He is also the innovator of a research tool that has revolutionised the study of cyclones and hurricanes.

After receiving a Bachelor of Science with First Class Honors in Mathematics from the University of New South Wales in 1972, the enthusiastic and bright-eyed Dr Holland was posted to Darwin's Bureau of Meteorology and was soon to receive his baptism of fire. The year 1974 started with Tropical Cyclone Wanda bringing torrential rain and flooding to Brisbane. It ended with another major Australian population centre being devastated by a cyclone.

As one of the forecasters on duty when Cyclone Tracy devastated Darwin in 1974, the memory is still as vivid and chilling as ever for Dr Holland some 35 years on.

"The central pressure of 950 hPa was not particularly special for severe tropical cyclones, but the winds were unusually strong," he said. "The anemometer at Darwin Airport recorded a gust of 217 km/h before the instrument was destroyed."

Tracy was first detected as a depression unusually close to the equator in the Arafura Sea on 20 December 1974 and had become a small but intense tropical cyclone at landfall, the radius of the gale force winds being only about 50 km.

"It moved slowly southwest and intensified, passing close to Bathurst Island on the 23rd and 24th. Then it turned sharply east-southeastward, and headed straight at Darwin, striking the city early on Christmas Day," he said.

"Warnings were issued, but perhaps because it was Christmas Eve, and

perhaps because no severe cyclone had affected Darwin in many years, many residents were caught unprepared. But even had there been perfect compliance, the combination of extremely powerful winds and the loose design of many buildings at that time, was such that wholesale destruction was probably inevitable."

Having survived the devastation of a major tropical cyclone within his first two years, Dr Holland packed his bags and headed to the United States to follow his passion. Attending Colorado State University, he received his Master in Atmospheric Science in 1981, followed by his doctorate in 1983.

Now Director of the Mesoscale and Microscale Meteorology (MMM) Division at the National Center for Atmospheric Research in Boulder, Colorado, Dr Holland has had a distinguished career in tropical meteorology including forecasting, teaching, research and community service.

At the Australian Bureau of Meteorology Research Centre he was Senior Principle Research Scientist, and founded and led the Mesoscale Meteorology Research Group, which has been active in research, major field programs in the Darwin area and support for forecast operations.

He has acted as chair of the Working Group on Tropical Meteorology for the WMO Commission for Atmospheric Sciences for 12 years, and championed the development and commercialisation of the Aerosonde Unpiloted Aerial Vehicle (UAV), which is a world leader in its field.

A cyclone's dangerously high wind means it's almost impossible for scientists to observe intense tropical cyclones and hurricanes in action. But getting access to the cyclone is critical to developing understanding.

"One of the big problems with tropical cyclones is they occur in remote areas. It's a very hostile environment. No-one wants to be there, but it's an area where you have to take observations," he said.

So, in collaboration with a Canadian engineer, Dr Tad McGeer, Dr Holland has developed a small autonomous aircraft powered by a small petrol engine. The aircraft has the option of being piloted from the ground or handed over completely to robotic mode.

"We communicate through to the low-earth orbiting satellite system, in this case the iridium telephone system, and the aircraft then is flying basically as a mobile phone. It actually has its own phone number – you can call it up and it calls you back – enabling transfer of new instructions to the aircraft and weather data to the ground."

The aircraft's ingenious design means that on a previous flight up in the Arctic, north of Alaska, the aircraft was under the command of a pilot sitting in Melbourne. "The aircraft

handles turbulence and the types of conditions in tropical cyclones extremely well. It has all the advantages of being small, which means it's very strong," he said.

"Essentially what this aircraft can do is fly in underneath the clouds in the really intense parts of the cyclone and take the temperature, pressure and humidity observations and, of course, the very important winds. And we know that will improve the forecast system by 30 to 40 per cent, which means we are much better able to warn vulnerable coastal communities."

Dr Holland's publications have included major contributions to six textbooks and forecast manuals, together with more than 100 research papers in atmospheric sciences and UAVs.

At age 60, when most would be thinking about a comfortable low-key retirement, Dr Holland's passion for meteorology, cyclones, and atmospheric research is as strong as ever.

He talks enthusiastically about his career and offers these words of advice for aspiring meteorologists: "This is one of the great careers. Because the weather is everywhere, we live in our own laboratory and every day you wake up and look out the window at something new and interesting."

The well-travelled researcher, however, is quick to remember where his journey began and the dramatic changes his career has brought to his life. "My time in the Top End is remembered with great affection. I came to experience the tropical weather and to learn how it ticks," he said.

"Darwin gets in your blood, the friendly and informal attitude, the outdoor lifestyle fishing for barra and just being out in the bush, and, of course Tracy, which firmly set me down an exciting and tremendously satisfying career path. Fortunately, this path brought me back to Darwin on several occasions as we established one of the major global meteorological experimental sites in the area."



‘ A cyclone’s dangerously high wind means it’s almost impossible for scientists to observe intense tropical cyclones and hurricanes in action. But getting access to the cyclone is critical to developing understanding. ’



Distance educators REACT to need

When **suzanne wilson** arrived in Australia in 1983 as a 25-year-old, she could not have had any inkling that in the next three decades she would become one of Australia's leading innovators in distance education services.

right

Award-winning distance education innovators Suzanne and Michael Wilson.

text

Richie Hodgson

Her arrival in Australia coincided with her first step into what was then a fledgling IT industry. Suzanne began her apprenticeship in computing in Melbourne and considers she was fortunate to have entered the sector when it was in its infancy. "Out with the typewriter and in with the PC," was Suzanne's succinct description of her transition into the IT world.

After working up to the position of national service administrator with Labtam International, Suzanne and husband Michael decided to refresh their lives with a new adventure. The couple moved to Western Australia to own and operate what would be the first of several hotels, restaurants and a nightclub. After a decade in the hospitality industry, Suzanne and Michael were again hungry for adventure, but this time mixed with a little more leisure.

"We bought an old yacht and took to the high seas, living aboard for the next six years," she said. This was some adventure for the self-described "lousy swimmer" who was without one ounce of sailing experience.

Eventually the Wilsons found their way to Darwin and as soon as Suzanne had regained her land legs, she completed a Masters in Business Administration at the Northern Territory University (a predecessor institution of CDU).

The latest twist in the dynamic duo's lives came in 2004 when they identified an opportunity to improve the way education was delivered to geographically dispersed students.

"Through my husband's work as a satellite engineer, we got to know the Schools of the Air and how lessons used to be delivered by HF radio, as many Territorians would know or have experienced," she said.

"With improvements in technology, computers started being the way forward in distance education and we decided to launch our own company specialising in the provision of distance education solutions, M & S Consultants Pty Ltd."

The couple devoted their time to developing the software tool known as REACT – Remote Educational and Conferencing Tool. REACT is a solution for delivering interactive distance learning lessons and video-conferencing to meet the educational needs of regional and remote students of all ages.

Launched in 2005, REACT won the Northern Territory Information Communication Technology award for innovation in that year and went on to win the prestigious national Consensus software award in 2006 for innovation, performance and potential.

In her current position, Suzanne trains clients to use REACT software, manages the marketing, documentation and accounts of the business as well handles the everyday administrative functions. Even with her substantial roles, Suzanne gives all the credit to Michael as the developer and writer of the software.



antennae

Suzanne Wilson is also a lecturer in marketing at CDU.

NT family digs deep to support CDU students

Territorians Mike and Cheryl Flynn have donated \$100,000 in scholarships to CDU to teach the environmentalists of tomorrow.



The Darwin-based Flynn family has gifted the scholarship money to support students of CDU's Bachelor of Environmental Research.

The family's youngest daughter, Jennifer Hawker, said the family believed that graduates of the Bachelor of Environmental Research would be in a position to make a valuable contribution to the wider world.

"As the well-being of the environment directly affects each and every individual, our family believes that environmental research is an incredibly worthy area to invest in, with benefits not only for those of us here now but also for all generations to come."

The generous donation is all about investing in the future.

"Our father raised us on the doctrine that education equals opportunities and that is exactly what he is trying to create for the recipients of our scholarships," Jennifer said.

"We're hoping that our scholarships will encourage and support students who are passionate about environmental research though may not be in a position to access the education opportunities available at CDU.

"If we can make it easier for a student like that to get through their studies, then it could just be that they go on to make a real difference to our future," she said.

The Flynn family has strong connections with CDU. Mike and Cheryl's three children Tracy, Jennifer and Wayne

each graduated from the university with qualifications in the fields of children's services, business and information technology. "Our Father was very keen to pass on the same opportunities that were made available to us as CDU graduates."

Director of Development for External Relations at CDU, Serhat Abdurazak said the university was extremely grateful to the family for making the very generous donation.

"As the university was only formed back in 2003, we are still a very young organisation so benefactors in the form of alumni are hard to come by.

"We're delighted that the Flynn family has dug so deep to donate this money to us and we're equally pleased that it is going into the field of environmental research, an area of excellence for our university," Mr Abdurazak said.

He said the donation would make a real difference to the recipients.

text

Row Booker

photograph

Courtesy Flynn family

above

Generous donors to CDU, Mike and Cheryl Flynn.



Warming up on the training track

From lawyer to political adviser to VET Director, there's one clear thread that runs through the career of **aaron devine** – making a difference where it's needed most.

interview

Robyn McDougall

photographs

Peter Eve

In 2006, you moved from one end of Australia to the other, from Tassie to the Top End. What lured you from the role of General Manager of TAFE Tasmania and Executive Manager of the Drysdale Institute to join CDU as Director of VET and Teaching Quality?

I thought the role in the Top End was very exciting. I hadn't worked for a dual sector organisation previously and that was also a point of interest. My wife, Sandra, and I were ready for a bit of an adventure before our children got more settled in school, so we were looking for work overseas and I was following up some opportunities in China. Moving to the Top End was like a mini-adventure, a long way from Tassie, remote, different and exciting.

far right

Aaron Devine

Did you have any first-hand experience of the NT before you ventured up?

No, none. I'd never been here.

What was the biggest surprise?

The beauty of the place, the landscape both in Darwin and Alice. It was so different from the Tasmanian landscape. The colours are different and the lushness of the Wet was fantastic.

Your early career as a lawyer and then senior policy and political adviser to a former Tasmanian Premier, the late Jim Bacon, suggests more than a passing interest in politics. Why the switch away from politics to education management?

I loved politics and still do! I will never completely walk away from it, and in some ways I do see VET as another way of assisting in making people's lives better. I spent nearly six years in a premier's office, working maniacal hours and usually in a very high-pressure environment. Working for politicians also has a tendency to give you a jaundiced view of life. You're normally called into issues because something has gone wrong or an issue can't be easily solved. So you spend a lot of time in crisis management and less than you'd like on

policy management. I really liked working for Jim Bacon, he was extraordinary. His mind was exceptional and his vision for Tasmania and the implementation of that vision was great to be a part of. I gave my all to his time in office and after six years was ready for a change.

I personally wanted to try something different and to try to get a work-life balance. I'd worked closely with industry policy and VET policy, and really liked that area. It's a positive area of government policy and that attracted me.

How did your interest in politics develop?

My father was always interested in politics and was, for a while, a member of the Tasmanian Parliament, so I always was interested. My individual passion escalated when I was at uni and also working and living in a community drop-in house in one of Hobart's poorest suburbs. It was during the depths of the Keating "recession that we had to have" and things were dire in Tassie with unemployment rampant and cutbacks in social programs the order of the day. At the same time as I was working with families that were literally struggling to feed and clothe their kids, the State Government under the Liberals awarded politicians a 40 per cent pay rise. I was outraged. The most critical opponent of the award was the head of the union movement in Tassie at the time and his name was Jim Bacon, so I went and introduced myself to him and we became friends. Jim's wife and I ran his campaign for Parliament. He got elected with the highest vote of any new member in Tasmanian history.

VET at this university is an impressive enterprise. It represents almost 75 per cent of the student base, delivers training into more than 100 remote communities and offers a great assortment of programs. How did you view the task when you started?

I was initially surprised by the unique parts of the VET enterprise at CDU, in particular remote delivery and the dual sector nature of the business. I really had no experience of remote



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‘ We’re the experts in this field and have some really passionate and hard-working staff who are committed to Indigenous Australians and improving the skills and capacity of all Territorians. ’

delivery when I started and I wanted to try to understand it quickly. Like any new job, you have to put the hours into understanding the issues and seeing how you can assist in improving outcomes.

I had a fantastic trip “down the track” from Darwin to Alice in my first few weeks. The Director Rural and Remote, Paul Fitzsimons, together with Jason McIntosh (who had also just started with CDU as PR officer) and I spent the week travelling around the NT. We dropped into remote communities and visited all our main campuses and centres. It was hot, fun, enlightening and the start of some great friendships and also my understanding of remote communities and their training needs. It’s an understanding that’s still developing.

And now?

I think that the national training framework is failing remote communities. We clearly need a different approach to engaging with remote communities and I think that needs to be built around community engagement and development programs that are established by the communities themselves. Equally, training for jobs where they exist is also important. This is the challenge moving forward for the VET system, trying to find a system that works better than the current one. I think that both local and federal policy makers understand this and I know they’re trying to improve outcomes.

CDU certainly has the expertise to engage in this debate and to shape the policy. We’re the experts in this field and have some really passionate and hard-working staff who are committed to Indigenous Australians and improving the skills and capacity of all Territorians.

You were recognised with a major national award in the VET system, the AUSTAFE Award for Educational Leadership in 2008. It recognised your leadership and contribution to VET. What are the hallmarks of a good leader in this sector?

It is critical for the modern VET manager to recognise the importance of VET to the economic base of Australia. Being a capable manager of change is critical due to the ever-changing policy environment. Having entrepreneurial skills is now critical. The best VET managers are also passionate about VET!

What are VET’s top three challenges for 2009?

I think maintaining the level of apprentice training will be a challenge for VET generally and for CDU. With the global financial crisis, we must do all we can to try to keep apprentices in training so we don’t dig another skills shortage hole for the Australian economy for when things improve.

The policy environment is pretty turbulent, so dealing with the outcomes of the Bradley Review into Higher Education and the Cutler Innovations Review will keep us all busy.

Finally, and most importantly, the third biggest challenge is improving the outcomes for two key client groups of CDU, school students and Indigenous communities. I hope CDU can be a catalyst in developing some alternate pathways for people who leave school without completing year 11 or 12... And I hope to be able to work with both levels of government with a clean sheet of paper on how we can assist Indigenous outcomes in remote communities through the national training system.

Do you want to talk about the opportunities?

CDU is a great VET provider, and it’s interesting that many Territorians don’t realise that compared with TAFEs in other parts of Australia, CDU comes out exceptionally well. The student and industry satisfaction data at CDU is first class, so if the customers like what you do then there is a great opportunity for CDU to grow both in the NT and outside the borders.

I think the other great opportunity for CDU is in pathway development and providing our students with seamless pathways between vocational training and higher education. Unlike a TAFE, CDU can provide both hands-on practical skills to students through VET and then good credit arrangement for a degree.

Finally, I think we need to grab the opportunity to up-skill existing workers with higher level qualifications. We need to assist business in building their productivity and be a partner in improving profit outcomes for businesses.

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Welcome smile from Australia

text
Jason McIntosh

photograph
Sarah Hanks

For Russian immigrant **olga postans**, the first shock delivered in her new home came at Australia's border with smiling Customs officers proving a revelation compared with their stony-faced counterparts back home.

Grasping her luggage and her teenage daughter Yulia, Olga and her husband George were soon on their way from Perth to their new home in the remote mining town of Gove, in the north east corner of the Territory.

That was in October 2007 and after adjusting to the flies, heat, isolation and cultural upheaval, the family is now embedded happily in the Gove community.

Although it wasn't an easy transition for Olga, with cultural alienation and her then brittle English, initial work cleaning motel rooms along with a specialised migrant English course at Charles Darwin University's Nhulunbuy campus were huge confidence-boosters.

She is especially proud of her daughter's new linguistic talents that saw her quickly develop near-perfect English "with an Aussie accent I can't understand", and move in many social circles.

But Olga isn't far behind now. Her new language skills have just helped her to land a service assistant position at Gove Hospital and, judging by her background – she was a lecturer in Russian tax law, this job will be the start of a rich career.

CDU Lecturer Ann Bartholomeusz works closely with Olga and said the hospital job was a major confidence boost for her. "She saw the job in the paper and applied herself, which shows her tenacity and effort and it's given her a wonderful opportunity to talk and engage with more people," she said.

Olga's home town of Novokuznetsk, in the remote Kemerovo region of Siberia, isn't a sea of salt mines as Western stereotypes might suggest. Siberia's freezing winters open up to warm, sub-30 degree summer days where white beaches and lush forests are a Mecca for swimming, fishing, hiking and gardening, pastimes Olga continues to enjoy in the NT.

But there are differences including no mushrooms to pick in the NT's tropics and a distinctly different approach to fishing. "The fish we would catch in Russia are the ones my husband uses for bait (in the NT)," she laughs.

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left
Olga Postans

antennae

The Adult Migrant English Program (AMEP) is sponsored by the Department of Immigration and Citizenship to provide English classes for migrants and refugees. The AMEP delivers to about 300 students across CDU's campuses and centres, with Thailand, Indonesia and China representing the top three countries of origin.

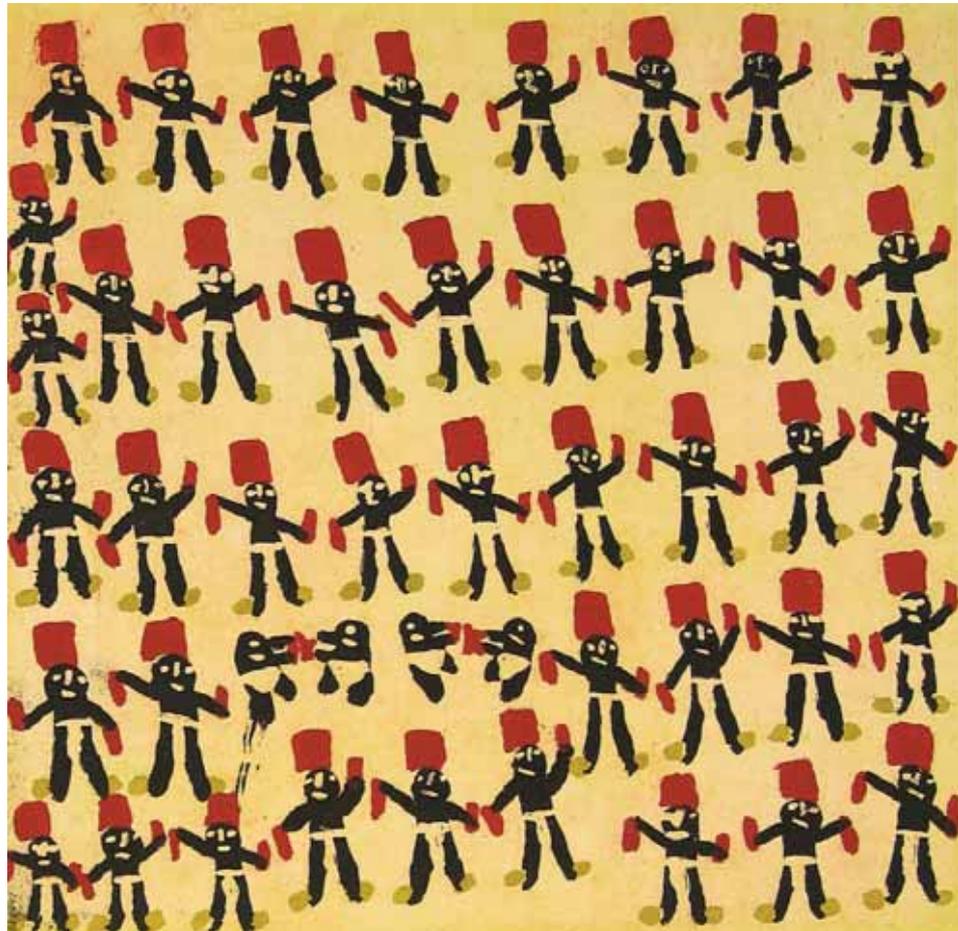


Alan Griffiths
Jooba from the Waringarri Suite
 2008
 Etching on paper
 Edition of 50

image 25 x 25 cm
paper size 52 x 40cm

collaborator
 Dian Darmansjah

printers
 Gertjan Forrer and Glynis Lee



limited edition

Alan Griffiths' quirkily delightful etching *Joonba* represents a group of men performing a ceremonial dance cycle from the Kimberley region.

The small animated figures are dotted across the surface of the image in undulating lines conveying a sense of rhythm and movement.

Toward the lower section of the work is a playful contrast of four seated figures performing with their clapsticks, disrupting the otherwise uniform pattern of the dancers.

Like many artists from the Kimberley region of Western Australia, Alan Griffiths draws his artistic inspiration from the country where he has lived and worked.

Born at Victoria River Station in the Northern Territory in 1933, Alan has had extensive experience as a stockman on cattle stations in the NT and Western Australia.

His employment has also included time as cook, plumber and tractor driver, but it wasn't until he retired in 1981 that he began painting.

Alan and his wife Peggy, also a prominent artist, are key performers in dance ceremonies which are themes frequently appearing in Alan's work.

He is acutely aware of the importance of keeping tradition alive through art and dance, ensuring that culture remains strong for future generations.

Alan's etching was created during a printmaking workshop at Northern Editions and is from the recent *Waringarri Suite* released in August 2008. For more information, visit W: <http://northerneditions.com.au/>.



Charles Darwin: Breaking the chain

To be Aboriginal in Australia today is to be classified according to race, wendy brady argues.

photograph
Peter Eve

below
Wendy Brady

We are continually engaged in justifying our rights as Indigenous people or disproving the fallacies of racism. The classifying of humanity began long before Charles Darwin wrote "On the Origin of Species". Hierarchies of race were in place and for Aboriginal Australians we had already been allocated our place at the lowest link of the "Great Chain of Being".

antennae
Professor Wendy Brady is
Head of the School of
Australian Indigenous
Knowledge Systems at CDU

The "Great Chain of Being" had its origins in ancient Greece and by the Renaissance it was a divine plan. God was at the top and each link down the chain became less perfect. Charles Darwin was aware of this taxonomy but saw it as a line of descent from a few select beings. Darwin still had God as the Creator, but the divine

plan now had natural selection influencing "progress towards perfection" (Darwin 1859. *On the Origin of Species*).

When "On the Origin of Species" was published, its focus was flora and fauna, however, it provided an opportunity for those who believed in a hierarchy of races to misconstrue it as justification for imperialism and colonisation of Indigenous nations. Herbert Spencer, who had pre-empted Darwin on natural selection, advanced his interpretation of Social-Darwinism by emphasising competition as the key to the fittest surviving.

Under pressure to expand his theories on natural selection Darwin, in "The Descent of Man" (1882), noted that colonisation brought with it disease, ill health, death, and a decline in living conditions for Indigenous nations. Being a man of his time he believed that "civilised races can certainly resist changes in their habits". Unfortunately, his conclusions were distorted and misunderstood. In Australia the interpretation was that Aboriginal people were less fit than the colonising population. Their answer was to civilise and Christianise Aboriginal Australians.

Governments moved to put in place Boards of Protection to save us from our fate and to "smooth the dying pillow", assuming we would not survive. The NSW Aborigines Protection Act of 1909 gave their Board power of "in loco parentis", thus classifying every Aboriginal person as a child whether they were adult or not.

The influence of Social-Darwinism underpinned Australian state and federal government legislation and continues to do so. The Stolen Generations were a result of the false belief that the removal of Aboriginal children was to "protect" them from being Aboriginal and to assimilate them into the dominant culture to ensure their survival. As it appeared to them "a cross with civilised races at once gives to aboriginal race immunity from the evil consequences of changed conditions" (Darwin 1882. *The Descent of Man*).

Many Australians still hold that unawareness of the consequences of colonisation. Those who have continued to assimilate, rehabilitate, indoctrinate, incarcerate, co-ordinate, dominate and legislate on our behalf, have not moved closer to "perfection". Indigenous knowledges are now sought to help solve the effects of colonisation, such as climate change to assist the survival of the natural world. The ability of Aboriginal people to survive in spite of colonisation is indisputable. Unlike the mantra of US President Barack Obama, it is not "yes we can", it is "yes we do" and although we may not be the fittest, we definitely survive.

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I think

Charles Darwin:

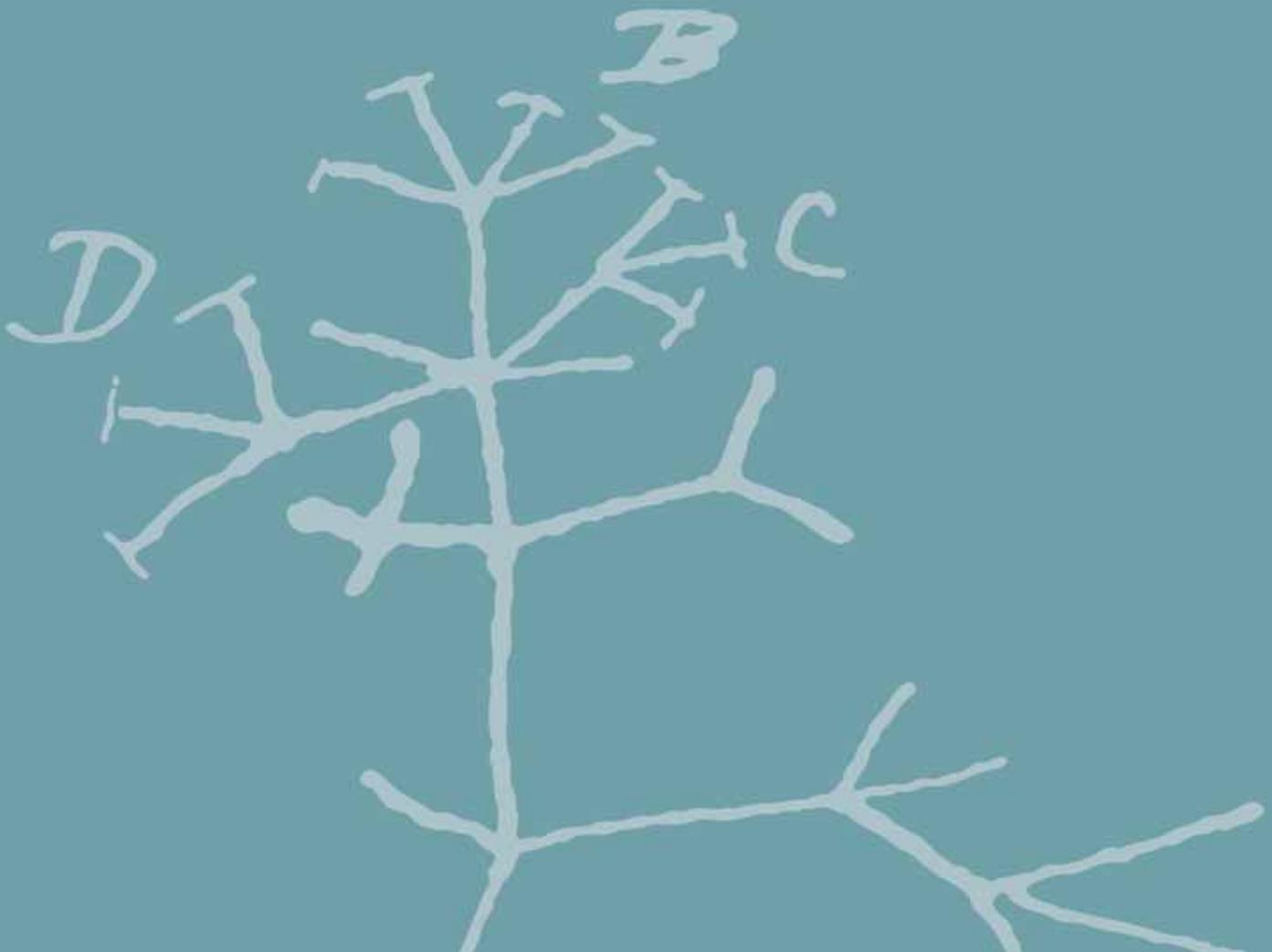
Shaping our *Science, Society & Future*

Brave new world? What is Darwin's legacy in the era of modern medicine and technology-based societies?

Understanding the controversy between Darwinian science and religion

Social Darwinism and indigenous nations: The origin of socio-political policy

22 – 24 September 2009



Science v religion at the Charles Darwin Symposium

Some 150 years after its publication, Charles Darwin's theory of natural selection continues to cause controversy.



text
Row Booker

photograph
Peter Eve

A fierce science versus religion debate was sparked back in 1859 by the publication of Darwin's infamous work "On the Origin of Species" where he explained in depth his theory that all living organisms evolved by natural selection over millions of years.

The point of contention was and still is that Darwin's theory goes directly against the Bible's account of creation in Genesis. Consequently, the topic of evolution has now become as much a religious issue as a scientific one.

This topic will form the basis of one of the most eagerly anticipated discussions at the Charles Darwin Symposium, "Charles Darwin: Shaping our Science, Society and Future" which will take place at the Darwin Convention Centre from 22 – 24 September 2009.

left
Keith Christian

In a theme entitled "Understanding the controversy between Darwinian Science and Religion", a panel of experts drawn from across the globe will discuss the intersection between science and religion from their own unique perspectives.

Charles Darwin University's Professor of Zoology Keith Christian will lead the theme at the symposium and said he hoped it would fuel discussion that went "way beyond the century-and-a-half old creationism debate".

"The implications of evolutionary theory for the concept of divine design in nature (ie the Genesis account of creation) is an intersection between science and religion that on one hand fuels controversy but on the other, also provides a starting point for scholarly endeavours and philosophical debate. It's the latter that I hope our symposium theme will explore," Professor Christian said.

And he has certainly sourced the right people for the task.

A Pulitzer Prize winning historian from the University of Georgia, USA, Professor Ed Larson, will open the theme with a presentation entitled "Darwinism and the Victorian soul".

He will discuss the immediate aftermath triggered by the publication of "On the Origin of Species" and raise key questions of scientific materialism and human purpose.

I'm hoping that through our themed discussion, we can explore the scope for compatibility between science and religion.

Professor Larson will offer up for discussion the idea that it is not so much that Darwinism undermined the Genesis account of creation, but rather that "On the Origin of Species" and Darwin's later work "Descent of Man" suggested that there was a naturalistic explanation for everything that could be said to make humans distinctive: morality, belief in god, love and the perception of a soul.

A molecular virologist from the University of Arizona, Emeritus Professor Martinez Hewlett, will present "Drilling for Darwin's science beneath layers of ideology", this time focusing on the contemporary and exploring the bounds of science and religion and whether there can be a nexus between science and faith.

Professor of Systematic Theology at Pacific Lutheran Theological Seminary and Theologian, Ted Peters will be the final speaker within this controversial theme.

His presentation, entitled "The battle over creationism, intelligent design and theistic evolution", will describe the worldwide controversy over evolution and religion and will cover the views expressed by a wide variety of religions and sects, including an Islamic perspective.

Through this carefully selected panel of speakers, Professor Christian said he hoped to create "a whole new understanding on the various positions taken on this worldwide controversy".

The theme will chart the rise of anti-Darwin forms of religion, anti-religious forms of Darwinism and religious forms of Darwinism, ultimately seeking to answer the question "can the bounds of science and religion really be so clearly defined?"

"I'm hoping that through our themed discussion, we can explore the scope for compatibility between science and religion, taking into account historical contexts as well as social and political contexts within the modern world," Professor Christian said.



web byte

To learn more about the Charles Darwin Symposium go to W: cdu.edu.au/cdss2009.

CDU to celebrate its namesake

This year marks two landmark anniversaries for eminent naturalist and father of modern day evolutionary theory Charles Darwin.

Not only is 2009 the 200th anniversary of his birth, but it is also 150 years since his revolutionary work "On the Origin of Species" was published.

This publication explains in depth his theory that all living organisms evolve by natural selection over millions of years, dictating only those most suited to their environment will survive and reproduce to pass on their "advantages" to their offspring.

This theory of natural selection will form the basis of the Charles Darwin Symposium, "Charles Darwin: Shaping our Science, Society and Future" taking place at the Darwin Convention Centre from 22 - 24 September 2009. The event is a joint venture of Charles Darwin University and the Northern Territory Government.

It's a forum designed to stimulate appreciation, debate and challenge Darwin's findings by bringing together an impressive range of specialists from around the globe.

The symposium will be divided thematically across the three days and will begin with an introduction to Darwin.

Day two will include presentations on Darwin's legacy and how it has influenced modern medicine and technology. The theme will begin by focusing on the human and will discuss topics such as how we have adapted and evolved in order to survive modern-day disease. Later in the day, the topic will turn to genetics and in particular phylogenetics (the evolutionary development and diversification of organisms) as a framework upon which to test the hypotheses of evolutionary mechanisms. The theme will close with a panel discussion on the ethics and future for Darwinian-based science.

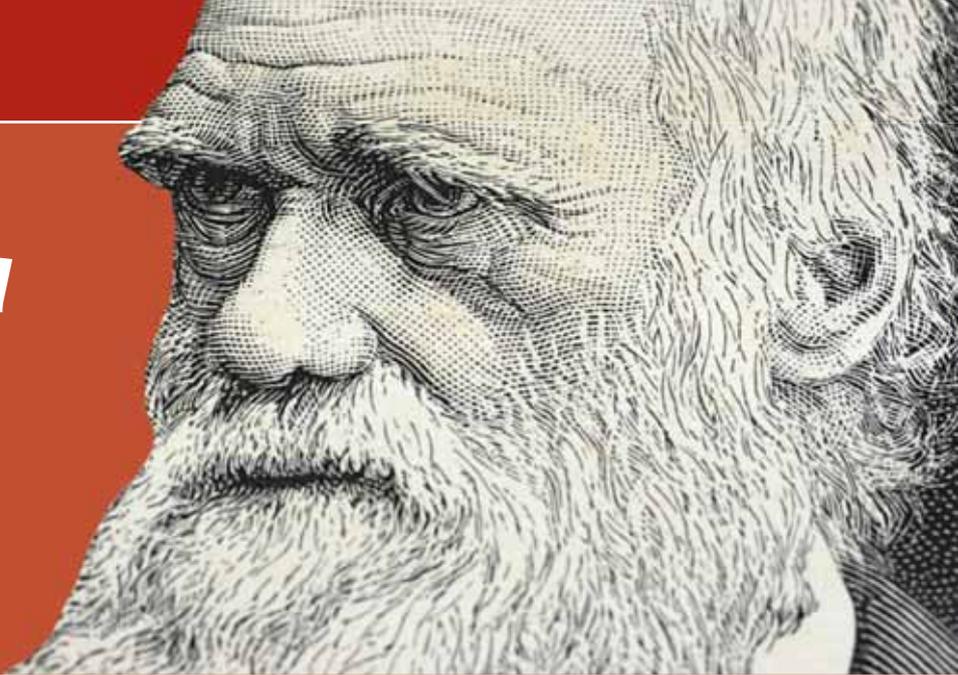
The final day will herald discussion on the ethical repercussions of Darwin's evolutionary theory, particularly focussing upon the controversy between Darwinian science and religion. This theme will further discuss the rise of anti-Darwin forms of religion, anti-religious forms of Darwinism and religious forms of Darwinism, ultimately seeking to answer the question: is there scope for compatibility between science and religion?

The symposium will close with a panel discussion about Darwin and society including how social Darwinism (ie, survival of the fittest) has impacted on Indigenous Australians in the past and present.

The symposium is free, but prior online registration is required for catering. Visit W: cdu.edu.au/cdss2009.

The man behind the scientist

It's a landmark year for eminent naturalist and father of modern day evolutionary theory Charles Darwin.



text

Row Booker

photograph

Courtesy Tim Berra

above

Professor Tim Berra, planning to put a human face to Charles Darwin.

Not only is 2009 the 200th anniversary of his birth, but it is also 150 years since his revolutionary work "On the Origin of Species" was published.

And it is this contentious publication that will form the basis of the Charles Darwin Symposium, "Charles Darwin: Shaping our Science, Society and Future" which will take place at the Darwin Convention Centre from 22 – 24 September 2009.

Delivering the key note speech at the symposium will be world-renowned Darwin specialist Tim Berra, an Emeritus Professor of Evolution, Ecology and Organismal Biology at the Ohio State University.

Professor Berra's 90-minute opening lecture will recount the fascinating story of the person and the idea that changed how we view the world. The lecture is based on his recently published book and has the same title, "Charles Darwin: The Concise Story of an Extraordinary Man".

"My lecture covers Darwin's revolutionary scientific work, its impact on modern-day biological science, and the influence of Darwin's evolutionary theory on Western thought," Professor Berra said.

The presentation will dig even more deeply, however, to reveal the great scientist as a husband, father and friend ultimately aiming to "put a human face on Darwin".

Through a collection of anecdotes, Professor Berra will emphasise the human side of Darwin by dealing with his family relationships and interactions with his closest advisors.

"In the presentation I talk about his happy marriage to his first cousin, Emma Wedgwood, with whom he had 10 children. I show how he was an openly devoted and affectionate father with each and every one of his children. How he grieved terribly for the loss of his eldest daughter, Annie, who was just 10 years old when she died of consumption – a death which led him to abandon Christianity altogether, stating that he simply could no longer imagine a just and merciful God would allow such suffering of innocent children.

"I discuss his work and, in particular, how he anticipated the public's reaction to an account of a godless origin of the species and how he therefore was always searching to develop more evidence.

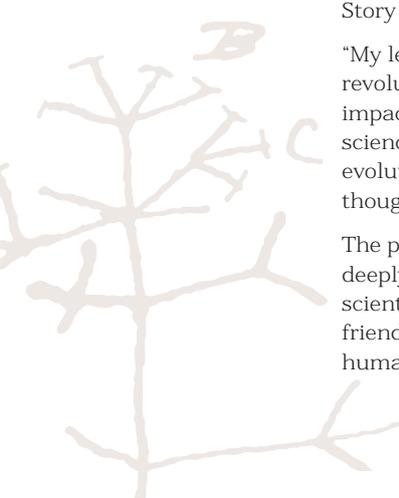
"The presentation ends with an account of Darwin's death on 19 April 1882 aged 73, brought on by a heart attack.

"Despite his beloved and devoted wife Emma's request for a simple funeral, Charles – at the request of 20 members of parliament – was instead laid to rest with much pomp and ceremony at Westminster Abbey. His grave now lies in the nave, a few feet from that of Isaac Newton and Charles Lyell. The funeral was attended by Darwin's surviving children, representatives from the United States, France, Germany, Italy, Spain and Russia and by those of universities and every scientific society within Great Britain as well as a large number of personal friends and distinguished men. However, his wife Emma did not attend the funeral to preserve her privacy," Professor Berra said.

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For more information on Professor Berra's presentation and the Charles Darwin Symposium, visit [W: cdu.edu.au/cdss2009](http://W.cdu.edu.au/cdss2009).



The infection, immunity partnership

One of the most eagerly anticipated speakers at this year's Charles Darwin Symposium is Nobel Laureate Professor **peter doherty AC**, who will explore the interaction between infection and immunity.

Laureate Professor from the University of Melbourne, Peter Doherty AC, will open the first full day of discussion at the September Symposium, designed to celebrate, discuss and debate the contributions of Charles Darwin to science, society and the future.

Professor Doherty, who was awarded the Nobel Prize for Physiology or Medicine in 1996 and named Australian of the Year the following year, is a researcher dedicated to the exploration of the immune system. A medical researcher who trained initially as a veterinary scientist, Professor Doherty will present on the topic: The co-evolution of infection and immunity. He will explore Darwinian science at work in human populations through "interface with simpler life forms that seek to live in or on us", an interaction more commonly known as infection.

"The emergence of slowly reproducing, multi-cellular, multi-organ systems like us has only been possible because we developed a complex, adaptive immune system that uses a vast spectrum of chemical recognition units (receptors) to bind other entities (proteins, peptides, carbohydrates) that are characteristic of rapidly replicating micro-organisms like viruses, bacteria and fungi," Professor Doherty said.

"There can be no doubt that infection provided the selective pressure that drove the evolution of what we call adaptive immunity.

"Almost everyone is persistently infected with one or more types of herpes virus: herpes simplex virus (cold sores), herpes zoster (chicken pox, shingles), Epstein Barr virus (infectious mononucleosis) and cytomegalo virus.

"On the whole, we live reasonably happily with these viruses and they with us because we are their sole maintaining hosts, their only home," he said.

There are organisms, however, that are normally maintained in other hosts.

"Organisms like the rat-born, flea-transmitted *Yersinia Pestis* (plague) or the yellow fever virus that survives in wildlife reservoirs and is spread by mosquitoes have no vested interest in adapting to us, though they must have exerted a massive selective pressure in historical time.

"Up until now, we have had little direct evidence on how viruses may have changed our genomes as we had no baseline for comparison. But now that we can recover Neanderthal DNA, we should be able to probe questions



text

Row Booker

photograph

Courtesy Professor Peter Doherty

left

Peter Doherty AC

like what Europeans were genetically before plague struck, a disease that from the time it first invaded in the 14th Century and for hundreds of years afterwards killed half to one-third of the population of Europe," Professor Doherty said.

His presentation will include the "shaping" effect that pathogens have when introduced to human populations including the impact malaria had in the Mediterranean with the emergence of sickle cell disease (Thalassemia).

"In this disease the red cell is changed in a way that does not support the life of a malaria parasite but is barely able to transport the oxygen that we need to live, an evolutionary trade-off that continues to cause severe disease and death," Professor Doherty said.

He will conclude on a controversial examination of what he calls the "intriguing and indisputable fact that, as we look at the obfuscation of the creationists, they don't ever seek to claim infectious agents for their mythology-based agenda".



New from CDU Press



Attracting and keeping nursing professionals in an environment of chronic labour shortage: a study of mobility among nurses and midwives in the Northern Territory of Australia

Garnett, S. T., Coe, K., Golebiowska, K., Walsh, H., Zander, K.K., Guthridge, S., Li, S. & Malyon, R.
paperback 142pp
ISBN-13: 9781921576003

There is a global shortage of nursing professionals. It is particularly tight for remote places like the Northern Territory, Australia. This report looks at the demographic profile of the Territory's nurses and midwives, how that has changed in the last few decades and explores prospects for the future.

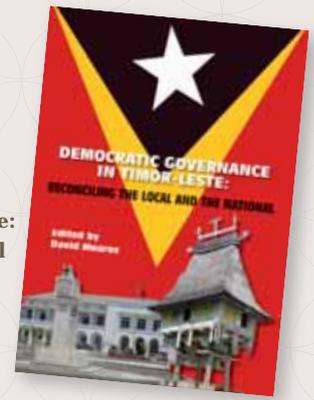
The report also explores why nursing professionals come to the Northern Territory, why they stay and why some leave. The drivers of international migration are investigated as well as some of the costs of nursing turnover to the Territory economy. Twenty recommendations are made to improve retention rates.

Stephen Garnett, Kristal Coe, Kate Golebiowska, Helen Walsh and Kerstin Zander

Institute for Advanced Studies,
Charles Darwin University

Steven Guthridge, Shu Qin Li and Rosalyn Malyon

Health Gains Planning, NT
Department of Health and Families



Democratic Governance in Timor-Leste: Reconciling the Local and the National

**David Mearns (ed)
Steven Farram (asst. ed)**
paperback 270pp
ISBN-13: 9780980457834

In February 2008, three days after the Darwin conference from which this volume arose, violent attacks took place on the president and prime minister of Timor-Leste. President Ramos-Horta arrived in Darwin for treatment just as some of the authors represented here were leaving the town, having participated in a two day discussion on the theme *Democratic Governance in Timor-Leste: Reconciling the Local and the National*. The timing of the conference seemed almost prophetic given the concerns raised by the delegates regarding the ongoing conflict and violence in Timor-Leste.

Some contributors revised their papers for publication in light of the horrifying attacks on the lives of Timor-Leste's leaders; others let their discussion stand as it had been presented at the conference. The result is an important collection of articles that provides highly pertinent insights into the current dilemmas of the government and people of the new republic to Australia's north. The book gives voice to East Timorese commentators as well as to Australian and other international scholars.

The volume explores the necessity to come to terms with the past in order to move on to a better future. It also considers the role of the state and parliament in the new democracy while seeking to set these against the cultural and social practices of the people at whom development is aimed. Finally, it examines the role of the agencies that have sought to assist in the country's transformation from a colonised to a post-colonial society with a sound economic future.

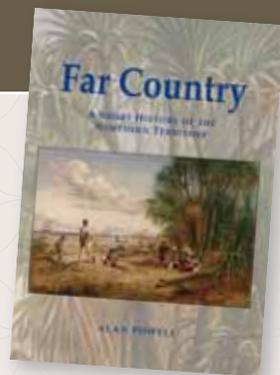
This work will add considerably to the growing literature on the opportunities and dangers facing what has often been classed as a 'fragile state'.

David Mearns is Associate Professor of Anthropology at Charles Darwin University. He has a long history of research in Southeast Asia and more recently in Indigenous Australia. In 2002 he published *Looking Both Ways: Models for Justice in East Timor* and has worked as a consultant to the United Nations in Timor-Leste.

Foreword by Deputy Prime Minister of Timor-Leste, Dr. José Luis Guterres - Opening Address at the Conference, Darwin, Australia, 7 February 2008

Contributors: Fernanda Borges, Fiona Crockford, Annette Field, James J. Fox, Mark Green, Damian Grenfell, Jill Jolliffe, Damien Kingsbury, Andrew McWilliam, Andrew Marriott, Akihisa Matsuno, David Mearns, Sara Niner, Yukako Sakabe, Dennis Shoesmith, Pyone Myat Thu, Josh Trindade, Bu V.E. Wilson





Far Country: A Short History of the Northern Territory Revised Edition

Alan Powell

paperback 248pp
ISBN-13: 9780980457872

This fifth edition of the classic history has been revised to bring the Territory story into the 21st Century.

A.T. Yarwood, on the first (1982) edition of Far Country:

Powell has achieved an outstanding success. He writes with economy, power and humanity of all the main phases of the Territory's history, starting with the coming of the Aborigines...He moves easily from the broad sweep of the geographical and political context to the sharp focus of personality and action.

Don Garden on the fourth (2000) edition.

This is... now effectively a classic history. Far Country is a fascinating and admirable history of the Northern Territory... With commanding sweep, Powell places this remote outpost within the broader perspective of world events, whether it be expanding Asian empires, European trading relations and wars, or South Australian and federal politics... It ranges broadly over the expected themes of a regional history – Aboriginal society, European exploration and the early European colonial settlements, race relations, the struggle to establish viable industries, urban settlements, politics, local cultural elements, literature and some of the significant individuals. But the context of the Territory adds piquancy to the story because of its environmental and human uniqueness... To an observer from the south, it is... a far country.

Alan Powell is Emeritus Professor of History at Charles Darwin University. In addition to *Far Country*, he is the author of *Patrician Democrat*, *The Shadow's Edge*, *War By Stealth*, *The Third Force* and was the General Editor of *The Northern Territory Dictionary of Biography*, Volume 1.



Communicating at University: Skills for Success

3rd edition
Nicola Rolls and Peter Wignell
paperback 250pp
ISBN-13: 9780980292398

This book aims to ensure that all students have a good foundation in the academic communication skills required to succeed at university and in professional settings.

Topics include: writing in an academic style; thinking and planning for assignments; developing effective reading and critical evaluation techniques; note-taking, paraphrasing and summarising; referencing; editing for correct grammar, punctuation and conciseness; writing essays, reports, annotated bibliographies and critiques; and verbal communication.

The text is written by experts in the fields of applied linguistics and academic literacy who are actively engaged in related teaching and research at CDU.

Information Communication Technology at University: Skills for Success

2nd edition
Greg Shaw
paperback 223pp
ISBN-13: 9780980292329

A good foundation in using Information Communication Technology (ICT) is essential to students to research and produce written and oral presentations successfully at university and in the workplace.

The text helps students to

- Understand how computers are used in teaching and learning
- Understand the principles of the computer-human interface
- Gain skills and understanding of the Internet, including Internet research and use of email
- Gain skills in using a word-processor to prepare assignments and reports
- Gain skills in using presentation software
- Gain skills in using spreadsheet software

This book takes a problem based learning approach with scaffolding to assist the reader to understand and learn by doing. There are practical exercises throughout designed to assist in this. ICT is changing rapidly and students and universities use different variations of computers and software. Consequently, a focus on generic principles and skills involved in using a computer is taken. The book will be useful for both beginning computer users and users that have some skills and knowledge but wish to extend these.



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Charles Darwin Symposium 2009

22 – 24 September 2009 Darwin Convention Centre

Charles Darwin:

Shaping our *Science, Society & Future*

The year 2009 marks the 200th anniversary of the birth of Charles Darwin and the 150th anniversary of his work *The Origin of Species*.

Through a combination of meticulous observation and innovative thinking, Darwin developed an explanation for the incredible variety of living things: that evolution is driven by natural selection.

Charles Darwin's scientific knowledge and rigour, acquired through human curiosity and ingenuity, have contributed significantly to the advancement of humanity.

This Symposium will provide an opportunity to appreciate, debate, and even challenge Darwin's findings, and will bring together an exciting range of speakers from around the globe.

Prior online registration at www.cdu.edu.au/cdss

For more information contact cdss@cdu.edu.au or telephone: 08 8946 6202

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