



CENTRAL COAST RESEARCH IN THE NEWS

VOLUME 5
NUMBER 1

2011

Over the last five years, our campus has grown into a dynamic and academically rich workplace with the introduction of specialist degrees, significant increase in professorial and other research-active staff, and a \$30 million expansion of buildings and associated infrastructure. Our relationships with industry and the professions has never been stronger, and community perceptions of our importance to the Central Coast region are at an all-time high. The stories in this edition of our campus research newsletter are just a sample of the research outcomes built on our achievements above, and adds to our earlier account of the work of some early career and postgraduate research students. I look forward to many more in 2012.

Professor Stephen Crump

Pro Vice-Chancellor – External Relations
Pro Vice-Chancellor – Central Coast/Port Macquarie

This issue of Research Central Coast highlights some of the important research being undertaken in 2011.

The scope and content of our research continues to be impressive, with projects spanning many disciplines including sports science, marine biology, podiatry, literature and business. In 2011, the University was proud to partner with the New South Wales Department of Primary Industries for the opening of a \$6 million purpose-built research centre at Ourimbah. The opening of this new facility is just one story from the current issue which highlights the comprehensive and ground-breaking research being undertaken at the University of Newcastle – Central Coast.

Professor Derek R Smith

Professor of Environmental and Occupational Health





UNIVERSITY PARTNERSHIP GROWS HORTICULTURE RESEARCH HUB

The University of Newcastle's Central Coast campus is destined to become a leading Australian horticulture research hub following the September 2011 opening of the \$6 million purpose-built state-of-the-art Central Coast Primary Industries Centre. The Centre is a partnership between the NSW Department of Primary Industries (DPI) and the University, and will be home to DPI conjoints who will explore areas including climate change, water, soils, biosecurity and biodiversity. The Centre will deliver benefits to primary producers across NSW and Australia as researchers will investigate new horticultural technology for farmers and help them implement best-practice methods. Already, a number of research projects are developing in efficient energy use in crop production, the impact of climate change on vegetation, sustainable bioenergy production, the use of waste products to minimise environmental impact, and the reduction of pesticide use through biological control in production and cold-storage disinfestation in stored and transported produce. The strong relationship between the University and the DPI will be reinforced as both institutions are committed to developing research and training opportunities for staff and students, and pursuing opportunities that build agricultural capacity in NSW and place the University of Newcastle Central Coast campus at the forefront of horticultural research in Australia. Construction on stage one of the Centre began in early 2010 and DPI staff relocated to the new facility in mid-2011.

For more information contact:

Dr Leigh Pilkington

NSW Department of Primary Industries

Email: leigh.pilkington@industry.nsw.gov.au

RESEARCH PUTS AUSSIE GRIDIRON STARS TO THE TEST

In early 2011, Dr Robert Lockie, Lecturer in Exercise and Sport Science, with the aid of Honours student, Matthew Jeffriess, and a group of Exercise and Sport Science undergraduate students, conducted research at the University's Central Coast campus to test the physical capabilities of junior gridiron players. Gridiron is increasing in popularity in Australia and this was seen as an opportunity to evaluate the strengths of junior players and assess how they can progress in their sport. The tests, which used state-of-the-art equipment to measure the speed, power and agility of athletes from Gridiron Australia's Future Stars Program who are the top-level players under the age of 19 in the country, are the same used for collegiate and professional gridiron players in the USA. The results were compared with those of American players in order to identify areas that can be targeted to improve the athletes' performance and to set training regimes to help them achieve peak performance. The testing aims to create a physiological profile of elite junior gridiron players in Australia and provide a benchmark to identify the star players of tomorrow.

'Gridiron is increasing in popularity in Australia and this was seen as an opportunity to evaluate the strengths of junior players and assess how they can progress in their sport.'

For more information contact:

Dr Robert Lockie

School of Environmental and Life Sciences

Email: robert.lockie@newcastle.edu.au





UNDERWATER WORLD CONSERVED AND EXPLORED WITH NEW PARTNERSHIP

The University of Newcastle, in formalising a partnership with the Central Coast Marine Discovery Centre in March 2011, joined a vision to promote marine environmental sustainability research and education. Already the Centre offers people of all ages access to high quality environmental programs, interpretative and hands-on displays, such as an Ocean Rock Pool, exhibits on climate change, and information on the University's baseline research of the recently scuttled Ex-HMAS Adelaide.

Undergraduate students studying Marine Science and Sustainable Resource Management at Ourimbah volunteer on weekends helping to maintain the live displays and leading interpretive tours. Establishment of a seawater research facility, a joint initiative of the University of Newcastle and the Marine Discovery Centre, provides a valuable teaching and research resource for staff and students. Exciting research projects are now underway looking at growth of the juvenile Port Jackson shark (Dr David Powter) and behaviour of the pygmy squid (Associate Professor Natalie Moltschaniwskyj). The location of a research facility within a public education facility provides the University with a unique opportunity to engage the community in marine science research; removing some of the mystery around research. The Centre allows University staff and students to communicate with the community about issues facing sustainable management of our coastal environments.

The Centre celebrates our unique marine environment with the community through the delivery of high quality environmental programs, interpretative, hands-on displays, and supporting research facilities.

For more information contact:

Associate Professor Natalie Moltschaniwskyj
School of Environmental and Life Sciences
Email: natalie.moltschaniwskyj@newcastle.edu.au

'The Centre allows University staff and students to communicate with the community through the delivery of high quality environmental programs.'

UNIVERSITY LECTURER UNKNOTTING NIGHT TIME LEG CRAMPS

One in two people over the age of 60 experience night time muscle cramping, which can cause sleep disturbance, ongoing muscle pain and may increase the risk of depression and falls in sufferers. While the debilitating condition is common even in young people, little is known about why people suffer cramps, which has prompted University of Newcastle Central Coast campus lecturer in Podiatry, Fiona Blyton to conduct research into the cause of muscle cramps. Conducted in conjunction with the University of Sydney Medical School, the research will also assess the effect that night time cramps have on the quality of life of sufferers and will help the medical community better understand the real impacts of the ailment. Mrs Blyton said that the long-term goal of this research is to develop an evidence base for the use of non-drug therapies for night time muscle cramps. While drug therapy is available, no drug has shown consistent effectiveness and safety. Currently, non-drug therapies have never been tested in high quality research despite concerns about sleep deprivation and increased risk of falls. Community response to the research has been overwhelming and data collection will soon be complete.

'The long-term goal of this research is to develop an evidence base for the use of non-drug therapies for night time muscle cramps.'

For more information contact:

Mrs Fiona Blyton
School of Health Sciences
Email: fiona.blyton@newcastle.edu.au





SUSTAINABLE MANAGEMENT OF PALLIATIVE CARE

Early in 2011, University of Newcastle researchers and health care professionals gathered for the Sustainable Palliative Care Forum at the University of Newcastle Central Coast campus to investigate the availability and the future of palliative care in Australia, and to explore ways to improve the management of palliative care for the benefit of patients, their careers and health professionals. Healthcare professionals represented the palliative care, general practice and aged care sectors. According to Forum convenor, Associate Professor Graydon Davison, this event has broadened the scope of potential research available from palliative care to the management of care for the dying in a number of healthcare domains, for example specialised inpatient palliative care, specialist and non-specialist inpatient acute care, community care, residential aged care, non-residential aged care, complex and chronic care and rehabilitative care.

'This event has broadened the scope of potential research available from palliative care to the management of care for the dying in a number of healthcare domains.'

As a result, four Central Coast academics from the Newcastle Business School have formed a multidisciplinary team to address the following projects, developed or developing in concert with organisations represented at the Forum: (1) Governance issues in not-for-profit organisations (including a community funded palliative care facility and a residential aged care facility); (2) Industrial Relations issues in aged care facilities; (3) Human Resource Management issues in aged care and palliative care facilities, and (4) Understanding the different languages of managing care for the dying in various healthcare domains. A variety of internal and external funding is being sought for these projects.

For more information contact:

Associate Professor Graydon Davison
Newcastle Business School
Email: graydon.davison@newcastle.edu.au



HARRY POTTER EXPERT

Following the release of the final film in the Harry Potter series, University of Newcastle Central Coast academic Dr Caroline Webb, an internationally acclaimed researcher of fantasy fiction, can offer insight into why the series has been so popular. In 2008, she published a paper in the journal *Papers: Explorations into Children's Literature*, titled

'Abandoned Boys and Pampered Princes: Fantasy as the Journey to Reality in the Harry Potter Sequence'. According to Dr Webb, her paper demonstrates that the style of Rowling's fantasy sequence matured with its readers, helping to prepare them for the realities and moral questions of adolescence. Dr Webb recently attended the Children's Literature Association Conference in the United States where she spoke about how the series departs from the heroic fantasy model in the final novels, and she is currently working on a book on the British fantasy tradition that includes discussion of Rowling's Harry Potter sequence.

'The style of Rowling's fantasy sequence matured with its readers, helping to prepare them for the realities and moral questions of adolescence.'

For more information contact:

Dr Caroline Webb
School of Humanities and Social Science
Email: caroline.webb@newcastle.edu.au