

The University of Newcastle – **Central Coast** has a strong and influential research program that helps develop relevant and exciting teaching, links to industry and business and expertise to our local community groups. This Newsletter highlights some examples of our work from a broad range of research interests and begins with a list of major groups. We welcome opportunities to undertake research with other external partners and on other topics.

Please contact [Stephen.Crump@newcastle.edu.au](mailto:Stephen.Crump@newcastle.edu.au)



[www.newcastle.edu.au](http://www.newcastle.edu.au)

#### CAMPUS-BASED RESEARCH GROUPS

- Sustainable Use of Coasts and Catchments
- Advancement of Food Technology and Nutrition
- Citizenship and Values
- Exercise and Sports Science
- Information Technology
- Interactive Distance e-Learning (ARC Linkage)
- Occupational Health and Safety
- Post-compulsory Education Policy and Practice
- Research on Early Childhood Education

## EDUCATION

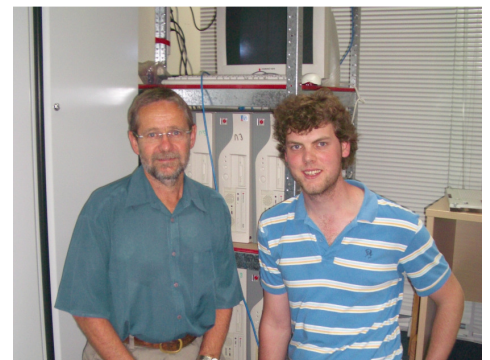
The LiNKS Program, designed by the School of Education, sees teacher education students spend five semesters at a primary or secondary school, or early childhood centre. By spending time in the school setting, students gain a valuable understanding of the daily responsibilities of teachers and the diverse nature of children across ages. The ongoing opportunities to become part of the school environment gives teacher education students the opportunity to enrich their understanding of the theoretical aspects of teaching. It also provides research opportunities as they relate to teaching and learning in practice. The LiNKS Program was developed using data from a longitudinal research project headed by Dr Ruth Reynolds, along with researchers Cheryl Williams and Joanna Brown.



## INFORMATION TECHNOLOGY

What do you do with old computers? Dr Ric Herbert and Tim Lynar extend their usable life by turning them into computer clusters to simulate artificial worlds. Artificial worlds are made up of huge numbers of interacting heterogeneous agents and are a bottoms-up approach to modelling and simulating systems. In such agent-based models (ABMs), the interest is in the emergent behaviour generated from the interacting agents, for example the strategies used by buyers and sellers in auctions. Here the agents are software objects and activity tasks are allocated to the computers as nodes in the cluster.

This research is important for a number of reasons. Firstly, it allows investigation of computer reuse as a means of managing e-waste. It also generates the computing power to solve large models and insights into distributed computing, which is becoming increasingly important for software applications in areas such as business intelligence, very large websites and data centres. The research is also providing insights into controlling systems using economic-based control. In addition, the application ABMs provide insights into business decision making and policy generation. And finally, more organisations are looking at clusters for their high performance computing and this is where we give our students an advantage in the job market - initially for RHD students but eventually all our BIT students as we work this into the 3000 level courses.



Dr Ric Herbert & Tim Lynar

# CENTRAL COAST RESEARCH

VOLUME 1  
NUMBER 2

# RESEARCH

## EARLY CHILDHOOD EDUCATION

The 'Learning Together' project is an early literacy initiative of the South Australian Government and three Central Coast based academics successfully tendered to evaluate this project. This research was undertaken in a highly participatory manner with Learning Together personnel actively involved at all stages. The project was undertaken at six sites across South Australia, involving hundreds of young children and their families, as well as staff. University of Newcastle staff involved in the research included Dr Peter Whiteman, Dr Sue Spedding and Dr Jean Harkins.

## SPORT SCIENCE



The ability to generate a high running speed in a short period of time is an essential requirement in many sports. A variety of training methods are used in an attempt to improve this ability, but the effectiveness of these methods has not been clearly established. Bob Lockie analysed the effects of different sprint training methods (free sprinting, weights training, plyometrics and resisted sprinting) on acceleration in field and team sport athletes to determine the technique, strength and power changes that result from these methodologies. The results showed that training method can significantly improve acceleration velocity in field sport athletes. One of the key findings was that each method caused an increase in stride length for the subjects, regardless of the protocol. The outcomes of the study include that the predominant power and strength adaptations that contribute to acceleration improvement include increased strength and reactive power. These developments are specific to a particular training protocol, and contribute to an increase in speed, primarily through an increase in stride length. With correct administration, all the protocols can improve acceleration velocity, primarily through stride length development and improved ground contact efficiency.

## DOING BUSINESS WITH CHINA

Dr Anton Kriz's doctoral research looked at business to business relationships and trust, and its impact on foreign companies looking to invest in China. While doing this research, he identified important implications of regional variations in business relationships in China that are generally not well understood outside the Chinese business community. Dr Kriz has recently been awarded a Churchill Fellowship which will enable him to look at these key regional variations in China with a view to helping inform foreign companies on how to address such issues if they are considering investing in the Chinese market.

## MARINE BIOLOGY

Steve Lindfield, a Bachelor of Science (Honours) student, has been investigating the spatial, temporal and depth-related variations of rocky reef fish. His research assessed the distribution of reef fish in the Port Stephens - Great Lakes Marine Park to depths of fifty metres, and provided useful baseline data on the abundance of fish species before the marine park was established. Another Bachelor of Science (Honours) student, Shanti Mors has undertaken research on the feeding behaviour of the Eastern Fiddler Ray in coastal waters off New South Wales. The Eastern Fiddler Ray is a species commonly seen by divers in New South Wales, and large numbers of stingrays are accidentally caught during trawling operations. Little is known about the ecological impact of the Eastern Fiddler Ray's removal from the marine ecosystem because little is known about the species. Mr Mors' research provides information on the stingray's diet, and therefore the likely impact on removing these species on their prey.



## RECENT PUBLICATIONS

***War, Nation, Memory: International perspectives on World War II in School History Textbooks***, written by Professor Keith Crawford and Dr Stuart Foster. This book demonstrates the stories that nations choose to tell their young at WW2 do not represent a universally accepted 'truth' about events of the war. Rather, wartime narratives contained in school textbooks typically are selected to instil in the young a sense of national pride, common identity and shared collective memory.

***Sappho***, written by Dr Marguerite Johnson. Sappho's ancient biography is covered in addition to post-classical accounts of her life, which continue to appear, in a variety of creative and non-creative contexts, in contemporary literature and art.

***Passion and Persuasion: Exploring Australian Non-Fiction*** by Deb McPherson.

***Molecular Nutrition and Genomics*** by Dr Mark Lucock. Draws from a range of relevant disciplines that extend from molecular nutrition, nutritional sciences and nutrition dietetics through to genetics, genomics and anthropology. The book presents a portrait of the fundamental role that nutrition plays in shaping who and what human beings are, as well as where they evolved from and where they may be heading as a species.