



MEDIA RELEASE

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NICTA SIGNS AGREEMENT WITH PETER MacCALLUM CANCER CENTRE TO REVOLUTIONISE CANCER RESEARCH

National ICT Australia (NICTA), Australia's information and communications technology Centre of Excellence, today announced the signing of an agreement with Australia's foremost comprehensive cancer centre, the Peter MacCallum Cancer Centre (PMCC).

The agreement focuses on applying advanced techniques in data analysis to large sets of genomic data generated by the PMCC. The relationship between NICTA and PMCC reflects the fundamental importance of current information and communications technology (ICT) research to the next generation of advances in biotechnology and life sciences. In advance of the agreement Peter Mac and NICTA researchers have interacted over the last year in the development of a test to predict site of origin of a cancer, for a small but significant group of patients where this diagnosis is problematic.

NICTA's Statistical Machine Learning (SML) research program will be working in close collaboration with the PMCC over the term of the agreement to change the way in which cancer medicine is practised, including diagnosis of the disease, treatment selection and prognosis.

Up until recently, most work in this area has been done with small datasets, processed using simple cDNA arrays, and the data analysed with relatively basic methods. Today, centres like the PMCC are generating high-quality datasets involving hundreds of samples with detailed clinical information that has been analysed on complex microarrays of 30,000+ elements.

The PMCC datasets contain important information on gene expression, gene copy number, and chemical modification of the DNA. "It is these comprehensive datasets and the challenge of unlocking valuable information that provide an excellent opportunity to develop innovative approaches to data analysis and mining," said Dr Adam Kowalczyk, senior researcher in NICTA's SML research program.

Dr Kowalczyk said the initial effort will concentrate on developing an IT methodology for discerning biologically meaningful and medically useful knowledge from microarray profiles of tissue, with a focus on cancer diagnosis and treatment. "Once we have established this methodology we will move to the development of practical algorithms and software tools for operation testing, demonstration, and operational implementation."

"Interaction with machine learning experts at NICTA is vital, given the huge amount of data and the need to use sophisticated techniques of computer learning in order to achieve accurate diagnoses. It is a great example of how the clever use of ICT capability can substantially speed the development of medical research" Professor Bowtell, Director of Research at Peter MacCallum Cancer Centre said.



“This is very exciting research that could alter current world knowledge on cancer and stimulate further experiments leading to positive outcomes world-wide,” concluded Dr Kowalczyk.

About PMCC

As Australia’s only specialist cancer centre with the largest cancer research group in the country (300 plus staff and higher degree students), Peter Mac is uniquely placed to make major contributions to fundamental and clinical cancer research.

The Centre was established in Melbourne over 50 years ago as the State’s only radiation therapy centre and is now internationally recognized as a leading comprehensive cancer centre where research and support and treatment of patients are seamlessly integrated.

Translating findings from the bench to the bedside is an important feature of the Centre’s spectrum of research activity, as is the development of new technology platforms.

About NICTA

National ICT Australia (NICTA) is a national laboratory with a charter to build Australia’s pre-eminent Centre of Excellence for information and communications technology (ICT). NICTA is building capabilities in ICT research, research training, and commercialisation in the ICT sector for the generation of national benefit.

NICTA is funded by the Australian Government’s Department of Communications, Information Technology and the Arts and the Australian Research Council through Backing Australia’s Ability and the ICT Centre of Excellence program.

NICTA was established and is supported by its members: The Australian Capital Territory Government; The Australian National University; NSW Department of State and Regional Development; and The University of New South Wales. NICTA is also supported by its partners: the University of Sydney; University of Melbourne; the Victorian Government; the Queensland Government; Griffith University; Queensland University of Technology; and Queensland University.

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