

Research update



UQ's Dr Bill Ellis and Richard Mason from QUT.

Koalas calls go mobile

High-tech monitoring through Microsoft Smartphones is helping scientists discover the secrets of deep koala calls. QUT IT researchers from the Microsoft QUT eResearch Centre are collaborating with a koala researcher from University of Queensland to provide the remote-controlled, solar-powered sensors which transport the bellows from the remote St Bees Island off the coast of Mackay, across the Telstra NextG network, and into a Brisbane laboratory. The microphones connected to the smart phones monitor the island's acoustic environment for two minutes every half hour. Information gathered through the smart phones is fed to an acoustic database where the QUT researchers are developing software which will automatically recognise the koalas' calls.

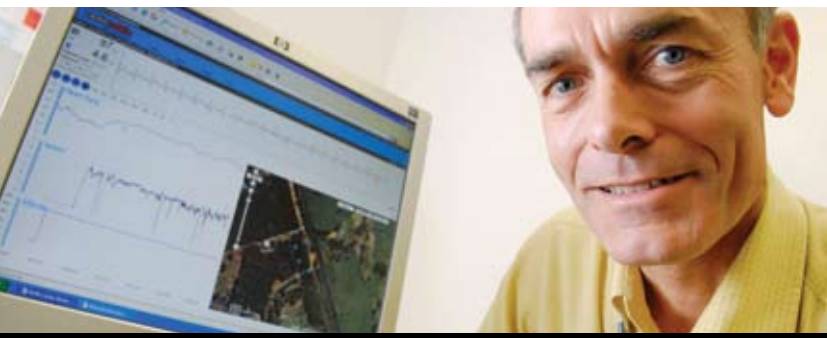
Mobile heart monitor wins recognition

An innovative project that lets heart patients undertake supervised exercise at home using a mobile phone, miniature heart monitor and GPS device, has been recognised in a prestigious international competition. The "Cardiomobile" system, developed by scientists and engineers at QUT and

Gold Coast-based company Alive Technologies, was the winner of the inaugural Australian leg of the European Satellite Navigation Competition, last year. The unique Cardiomobile monitoring system allows people who have been in hospital for a heart attack or heart surgery to undergo a six-week walking exercise rehabilitation program wherever it's convenient, while having their heart signal, location and speed monitored in real time. This approach was taken because 80 per cent of cardiac patients never complete recommended hospital outpatient rehabilitation programs.

New biofuel research facility

A new, unique biofuel research testing facility at QUT will help speed up the race to drastically reduce Australia's carbon emissions and dependence on fossil fuels. Australia's only biofuel engine research facility, which opened late last year at QUT, will enable testing of a range of biofuels, from used cooking oil to algae, and new engine technologies with the aim of producing engines tailor-made for particular biofuels. The aim will be to provide engine manufacturers with the information they need to build the most efficient tailor-made engines for particular fuels.



Cardiomobile co-developer Dr Charles Worringham.



Biofuel engineer Dr Richard Brown.

Healthy tissue saved by innovative concept

Small body movements that occur while breathing are enough to cause unnecessary damage to healthy tissue when treating cancerous tumours with radiotherapy, but a unique solution has been invented by QUT physics lecturer Professor Christian Langton, pictured. Professor Langton was awarded first place for his concept in an ideas competition run by QUT's commercialisation company bluebox. When a person is about to undergo radiotherapy, their body is scanned to ensure that radiation is sent to the right points in their body. However, simple bodily functions like breathing can move tumours away from the radiation during treatment and cause damage to the healthy tissue while leaving parts of the tumours untreated. Professor Langton has formulated a method for radiation delivery that uses dynamic ultrasound imaging which he anticipates could negate the problem of tissue movement.

