



The Heart of Nature

Money apparently makes the world go round but does it make the heart beat? **LORI WEIGHTMAN** talks to Professor Geoff Dobson about how much needed financial assistance could go a long way to help revolutionise cardiac surgery right here in Townsville and around the country. Photography by Insight Creative.

For the majority of the general populus who pick up a newspaper or manage to catch the news, you'll know the media is sufficiently plied with stories about "new research", proclaiming inconceivable facts like "new research says all those green vegies you thought were healthy think again." They now give you cancer instead of helping prevent it. I'm exaggerating for emphasis but regardless, this isn't one of those stories.

Now a professor of physiology and pharmacology at James Cook University since 1993, Geoff Dobson obtained his PhD in Canada, before working at the National Institute of Health in the USA. "My broad research strategy has been to tap into hundreds of millions of years of animal adaptations from nature's own laboratory and apply them to develop new therapeutics to treat human disease," Geoff explains. "Based on the 'tricks' of natural hibernators, I have developed new ways to arrest and re-animate the heart for 'on-pump' open-heart surgery."

For more than 10 years now, predominantly unbeknownst to the rest of the nation, Geoff's million dollar question has been, "could the human heart be manipulated pharmacologically to operate more like the heart of a hibernator for cardiac surgery?" Well as Geoff's extensive research has uncovered, the answer is 'yes'. "The human heart in cardiac surgery is stopped using a solution of high potassium – and

high potassium just stops the heart," Geoff explains. "Potassium has no other cardio-protective properties and it's very unnatural. So my quest was to remove it and find a more natural way to arrest the heart."

In fact, just recently Geoff and his team were able to arrest a rat heart for over 24 hours. "If you needed a donor heart in Townsville from Melbourne or Perth it would probably wouldn't make it since four to five hours is the safe limit for human heart storage. With our technology you could put the heart on a plane, fly it around the country twice and drop it in on the way home in good condition."

Geoff's quest extends beyond the reaches of his JCU lab. This phenomenal way of protecting the heart during surgery has proven a big success so far, but not in Australia. After four years of trying to organise a small clinical trial here, he made a break for the United States. There, several hospitals are using the technology and they aren't looking back. Still here, Geoff and his small team at JCU continue their endeavours to absorb the attention of interested parties willing to help fund their work.

"Science is such an under-funded endeavour – you do it because you enjoy the challenge of trying to make a difference," Geoff says wholeheartedly. "There are many people like myself who have an idea that may not have translated into human outcomes,

but that doesn't mean they're not a success. They're a success by putting their hand up to try and make a difference in the first place."

While Geoff's research has been given a few pumps of funding from the Heart Foundation, it hasn't evoked such a tug of the heart strings from large government funding bodies – one who's described it as "clinically irrelevant".

"I've recently met with the Minister for Health in Townsville and we're waiting to hear whether there's support from Queensland Health. We have had some success from the Department of Tourism, Regional Development and Industry," Geoff goes on to say.

Despite the continuous financial hurdles, what keeps Geoff going despite the lack of funding are "those very sick patients lying on their back, clutching between life and death who have no voice".

This proclamation isn't one of grandiose proportions. Simply, the proof is in the pudding and this is ultimately a case of a technology that is currently being tested and validated by cardiac surgeons in the US, and hopefully back in Australia if sufficient funds can be found. The moral of this story – eat your vegies and listen to your heart. **CL**