

Professor Carolyn Mountford – “crazy lady” whose invention went main stream.



In Australia during the 1980s when Professor Carolyn Mountford was working with histopathologist Professor Peter Russell on a new way of detecting cancer early, other people would sometimes refer to her as “the crazy lady.”

“I think some still do,” laughs Carolyn, who’s now Director of the Centre for Clinical Spectroscopy and Visiting Professor of Radiology at the Harvard Medical School.

Carolyn, then a young Oxford-trained biophysicist at the Ludwig Institute for Cancer Research at Royal Prince Alfred Hospital in Sydney, was undeterred by doubters. She was convinced she would detect changes in the chemistry of human cells as they became cancerous by studying them inside a strong magnetic field. And she was proved right. The technique she was largely responsible

for developing in Australia, known as magnetic resonance spectroscopy (MRS), can identify cancer in the early stages.

Saving lives

Though the technology is not yet widely available, the discovery is already saving lives. “We can take a biopsy from the breast of a woman, put it in a pathology magnet and tell whether it has spread to the lymph nodes just from the chemistry of the primary tumour,” explains Carolyn. “There’s no other technology available today that can do that.”

Looking back, her early work was “cutting edge stuff” for which ordinarily there’d be little chance of getting funding. But she won a series of grants from the Leo & Jenny Foundation (renamed Cure Cancer Australia in 2002). Each grant – in 1988, 1992, 1993 and 1995 – set Carolyn and her colleagues up to win subsequent funding from the National Health and Medical Research Council and elsewhere.

Seed money

“We owe a huge debt of gratitude to Cure Cancer Australia and the Leo & Jenny because it was seed money that literally made the difference between this science working and not working,” says Carolyn, who now spends three months in Australia each year as a professorial fellow in the Radiology Department of the University of Melbourne. “My most important goal now is to train the young faculty around me so I can be

sure this technology will continue to be developed,” she says.

Born in England, Carolyn migrated with her parents to New Zealand when she was 10 and completed her first degree in Auckland. At Oxford, she completed a Master’s degree and PhD in biochemistry and biophysics before moving to Sydney.

While Carolyn has spent the past two decades working with scientists and doctors developing magnetic resonance spectroscopy as an adjunct to and in some cases a replacement for histopathology, more recently she’s extended the use of MRS to new fields including infectious diseases, brain chemistry and pain management.

Making technology available

While regretting that the technology she pioneered is not yet widely available, Carolyn is working closely with the supplier, Siemens, to try to rectify this. “Part of what I’m trying to do now is get data analysable by patent recognition methods,” she explains. “If analysis can be done by patent recognition, it will become available for everybody more quickly.”

Despite an onerous work load, Carolyn Mountford considers herself fortunate because she loves what she does. Then, as now, the realisation that she was right and that her endeavours may help people and make a difference, kept her going. And nobody thinks she’s crazy any more.