

2000 – Executive Director’s Report

Research

The important thing in science is not so much to [find] new facts as to discover new ways of thinking about them. Sir William Lawrence Bragg, in *Beyond Reductionism*, 1958.

Before commenting on our progress during 2000, I would like to address an issue that underpins the very essence of the Institute’s being, the every essence of the type of research we are continually attempting to foster and generate. Basically, there are two major types of research – the first leads to *findings* and the second to *discoveries*. Both are valuable and the distinction between the two is often subtle, but nevertheless real. Many researchers make diligent progress: adding increasing bits of knowledge to our understanding of biology and disease processes. Very few, however, take these findings, build on them and generate a discovery – that is, an insight that establishes a new paradigm or overturns an old one, an insight that promotes a new way of thinking or a new way of looking at the way we develop, function or respond to disease or environmental stresses. To put this nebulous distinction into context, it is worth recalling the comment by Sir Isaac Newton who said, “*If I have seen further, it is because I have stood on the shoulders of Giants*”. Newton, without doubt was someone who only made discoveries. To think that the VCCRI can generate Newtons is, of course, ridiculous and arrogant – such individuals come along, at best, one a century. But, what we can and, I believe, should try to do, is to recruit and support those who will become giants, those who will generate not just findings, not just band-aid solutions, but real and lasting discoveries; discoveries that ultimately will lead to paradigm-shifts, to major new diagnostic, therapeutic and preventative strategies.

Of course, finding future giants, let alone recognising who will become giants before they do, and then fostering their progress to *gianthood*, is both difficult and expensive. Nevertheless, this is exactly what I believe we have tried to do, thus far, and should continue to do into the future. Having sufficient funds to support this endeavour is an ongoing problem, but, more importantly, having the support of people like those on our Board, those on our Appeals Committee, and also those who are the Members of the VCCRI (the Sisters of Charity), who share our vision and embrace our lofty goals, is absolutely essential. My most sincere thanks to all these people.

As indicated in the Chairman’s Report, 2000 was another excellent year of progress for the VCCRI, with major advances being reported in scientific journals of the highest stature, including *Nature Reviews*, *Genes and Development*, *the EMBO Journal*, *the New England Journal of Medicine*, *the FASEB Journal*, *Circulation*, and *Circulation Research*. Further, three VCCRI papers were considered so significant that they were featured on the front covers of the journals in which they were published.

Let me highlight but one of these discoveries, made as a result of collaborative studies involving the Institute’s Developmental Biology (Prof Richard Harvey, Head) and Cardiac Mechanics (A/Prof Michael Feneley, Head) Units. By way of background, Prof Harvey’s group had previously discovered that normal heart development is critical dependent upon a key, master regulatory gene, called Nkx 2-5, and not surprisingly that inactivation of both copies of this gene (there are two

copies of all genes – one inherited from each parent) prevented heart development, and resulted in the demise of the foetus. In this study, it was now shown that, surprisingly, inactivation of only one Nkx 2-5 gene causes not foetal death, but one of the commonest forms of congenital heart disease, a hole in the heart or atrial septal defects (ASD). Given that this heart defect can affect either the new born baby, or remain silent until adulthood, and given that the molecular defect underlying an ASD was entirely unknown, it is not surprising that the importance of this paper was recognised by being the subject of an editorial entitled, “*Developmental cardiology comes of age*”. The editorial, published in the same issue of the prestigious American Heart Association journal, *Circulation Research*, not only praised the VCCRI discovery, but pointed to its potential for discovering how single gene defects cause human congenital heart diseases and, therefore, the potential for developing new diagnostic and therapeutic strategies.

Grant Funding and Awards

In 2000 we again surpassed our previous year’s performance in obtaining peer-reviewed grant support. This is evident from a 60% increase in grant income over that in 1999, and included grants from the NH&MRC, the National Heart Foundation, the Charles and Sylvia Viertel Trust, the Ramaciotti Foundation, the Rebecca L Cooper Foundation, United Way, The Royal Society, UK, and the Wellcome Trust.

In addition, our R&D Infrastructure Grant from the NSW Health Department was renewed for another three years, with the VCCRI moving to the highest level of funding (Stream 1).

2000 also saw one of our trainees, Jon Ryan, receive a young investigators award from the Australian Society for Cardiothoracic Surgery, and two others, Ms Gabby Thomson and Ms Bryony Mearns, graduate with first-class honours for their BSc(Hons) work, which was performed at the VCCRI. Congratulations to all of them and a special congratulations to Gabby who topped the year and received the University Medal.

Recognition also goes to Prof Terry Campbell for appointment to President, Cardiac Society of Australia and New Zealand (2000-2002), and to the Pharmaceutical Benefits Advisory Committee, NSW Health Department; to A/Prof Anne Keogh, who served as President, International Heart Lung Association in 2000; to A/Prof Peter MacDonald for appointment as Secretary, Cardiac Society of Australia and New Zealand; to David Martin for appointment as an adjunct Professor in the Faculty of Life Sciences, UNSW, and to Prof Michael O’Rourke who received the prestigious Björn Folkow Award from the European Society of Hypertension.

Staffing

There were many comings and goings in 2000. In particular, we welcomed Dr Diane Fatkin and Dr Sally Dunwoodie as laboratory heads in the Molecular Cardiology and Developmental Biology Units, respectively. Both are outstanding young investigators with distinguished records of achievement, and both have already been extremely successful in obtaining peer-reviewed grant funding. We also welcomed, Dr Jiri Novotny as a visiting scientist in the Institute. Jiri is a distinguished senior scientist with a long record of major achievements in the areas of computational chemistry and bioinformatics. We are privileged to have him in the Institute - his insights and contributions have already greatly enriched our thinking and culture of science.

Sara Holman, Bryony Mearns and Jan Michalicek joined Bob Graham's laboratory; Guanglan Guo, Christina Leimena and Vesna Nikola joined Diane Fatkin's laboratory; Jennifer Cropley, Ray Farley and Gabby Thomson joined David Martin's laboratory; Owen Prall, Mark Solloway and Fiona Stennard joined Richard Harvey's laboratory; Annabelle Scott and Sarah Withington joined Dunwoodie's laboratory, and Ruth Arnold and Ke Liu joined Ahsan Husain's laboratory. Finally, Mr Tim Dugan joined us as the Institute's Chief Operating Officer, and Ms Anne Collins (from July to December) and then Ms Cassandra Fernandez (from December) joined us as Finance Manager.

Eighteen people including one of our junior faculty, Dr Mingdong Zhou left during the year; Dr Zhou to take up a senior position in a Biotechnology Company in China. We wish all of them the very best for the future.

Acknowledgements

It would be remiss not to recognise the outstanding efforts of all of our faculty and staff (both administrative and scientific) throughout 2000. Thank you all for your excellent contributions.

Thanks also to all of our many generous supporters – Friends of the VCCRI – corporate, private and governmental, who continued to share our vision and goals.

Finally, I wish to thank our Board and in particular our Chairman, the Hon Neville Wran, AC, QC, our Appeals Committee and, of course, the Sisters of Charity, for their continued generosity, wisdom and commitment.

Professor Robert Graham