

Annual Report 2008






Baker IDI

 Baker IDI

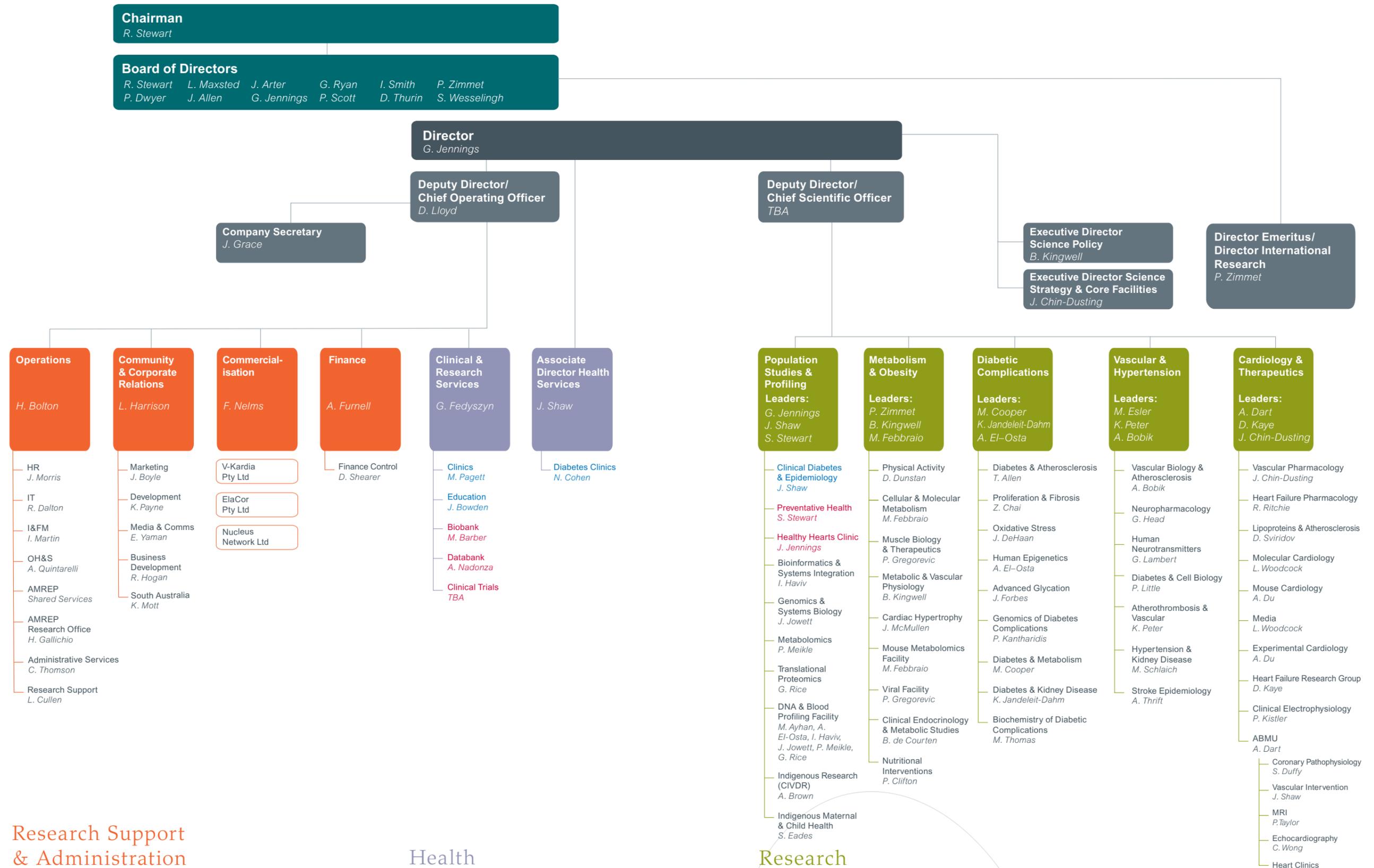
Alfred Medical
Research & Education
Precinct
77, 83 & 85 Commercial Rd
MURDOCH
MURDOCH UNIVERSITY
MURDOCH
MURDOCH UNIVERSITY



Contents

| | |
|---|----|
| The Organisation | 2 |
| Director's Report | 4 |
| Chairman's Report | 6 |
| Our Patron | 7 |
| Board of Directors | 8 |
| Research Themes | 14 |
| Health and Disease Research | 16 |
| The Baker IDI Research Lifecycle | 17 |
| Research Highlights | 18 |
| International Projects | 22 |
| Centre for Indigenous Vascular and Diabetes Research | 24 |
| Baker IDI Diabetes Clinic | 26 |
| Nucleus Network | 28 |
| Intellectual Property | 30 |
| Community and Corporate Relations | 32 |
| Supporter Recognition | 36 |
| Concise Financial Report | 38 |

The Organisation



Research Support & Administration

Health

Research

Director's Report



“Our mission continues to drive the work we do: to reduce the ill health and mortality caused by the effects of diabetes, cardiovascular disease and poor lifestyle choices.”

Garry Jennings, Director, Baker IDI

The year 2008 will always be remembered as auspicious in our history. The successful merger between the Baker Heart Research Institute and the International Diabetes Institute marked the beginning of a new era of collaboration and innovation with the establishment of Baker IDI Heart and Diabetes Institute in July last year.

Our mission continues to drive the work we do: to reduce the ill health and mortality caused by the effects of diabetes, cardiovascular disease and poor lifestyle choices. Not all ill health is simply driven by lifestyle; obesity, as we are learning, is a complex state and to dismiss “fat” as personal weakness is both unhelpful and ill-informed. Obesity is an interaction of genes and behaviour and takes place against a background of environmental and socio-cultural influences. It is the driving force behind our type 2 diabetes epidemic, which has significant cardiac complications. It can lead to renal failure, blindness and amputations. It can also cause some cancers. Similarly, cardiovascular disease is related both to lifestyle and to a certain genetic inheritance which our Research Highlights can explain. These health burdens carry a high social and economic cost and are resulting in decreased life expectancy.

Our new organisation is involved in important basic science, unlocking the molecular and cellular origins of disease and of disease complications. Just as importantly we are committed to clinical research and to large-scale population studies that investigate the prevalence and effects of disease in the community: in individuals, in families, in the workplace and the effects on the health system. It is this breadth of research, encompassing all aspects of disease and health and its progression through the lifecycle, that makes Baker IDI unique. Addressing the close link between diabetes, metabolism, lifestyle and the development of serious health

problems is our paramount concern. The creation of Baker IDI through the merger has allowed us the scale and the scope to study these connections at greater depth using a broader range of approaches.

2008 Research Highlights

- Development of a recombinant MRI contrast agent that allows selective imaging of activated platelets. This is potentially very helpful in defining thrombosis and unstable plaques. It has been found that we can identify early forms of inflammation with this imaging tool. This is potentially a major new advance in the early recognition of heart attack, stroke and other disease involving thrombosis.
- Development of a new poly-marker approach for the diagnosis of coronary artery disease with the use of urine samples. Using capillary electrophoresis coupled to mass spectrometry we can define proteome patterns that are highly specific for coronary artery disease.
- The demonstration that HDL has profound anti-inflammatory effects on monocytes, helping to explain why this 'good cholesterol' helps avoid atherosclerosis.
- The development of a score for assessing the risk of developing diabetes from AusDiab which is now being used nationally (and as part of a new Medicare item) to select people for diabetes prevention programs.
- In Victoria, setting up and piloting the WorkHealth program, which aims to screen all Victorian workers for cardiovascular disease, diabetes and other chronic diseases over the next five years.

Our commitment to health in disadvantaged communities has strengthened in the last year – we know too well that socio-economic factors play an important part in health and disease. Because of this,

our range of research initiatives in indigenous communities has continued apace under the leadership and guidance of our Population Studies and Profiling unit, which includes Dr Alex Brown, Professors Jonathan Shaw and Simon Stewart and a talented team of epidemiologists and clinicians. With the unparalleled experience, commitment and zeal of Professor Paul Zimmet, Emeritus Director and Director of International Research, our research and profiling of diabetes and its complications in disadvantaged overseas communities has also expanded, and you can read more about this in the following pages.

An important part of our national expansion was realised with the establishment of our Adelaide campus. Officially opened by South Australian Health Minister John Hill, our presence in Adelaide is a response to the Rann Government's commitment to boosting South Australia's share of national medical research activity. Launching some important health initiatives – Lift for Life a strength training program for older Australians being just one – we see this state as critical to our future health and medical research plans. Professor Murray Esler and his team organised a highly successful international conference held in Prato, Italy – on the topical subject of the link between stress and heart disease. This conference served, the first of its kind, to further establish our reputation as leaders in this field.

All of this of course would not be possible without the range of talent our Institute is home to. Our researchers are internationally renowned and leaders in their fields here in Australia. This is evident in the number of important research publications we can cite, as well as the many government and other contracts we undertake in the pursuit of better health for all.

For all our own talent and commitment, however, our work would not continue without the many supporters we have,

some longstanding and some new. We thank you all for your tireless efforts and your belief in our mission

I would also like to pay special tribute to The Baker Foundation. Their long standing and timeless commitment to our work enables us to provide much needed technology and infrastructure to support our scientific efforts. We remain exceptionally grateful for this long standing partnership.

We know that we are having an important influence on Australia's health and medical research landscape and we can credit the wonderful government, industry, individual and corporate support we receive for allowing us to carry on and improve lives, now and for in future generations. Special thanks go to our Board of Directors and to our much-loved patron, Sir Laurence Muir, who has committed so much time and energy to our institute. Dame Elisabeth Murdoch and the entire Friends of Baker IDI group also deserve special thanks and mention here for their work and their support.

Our new organisation has already entered into many exciting collaborations and projects, some of which are outlined in the pages of this Annual Report.

Please take a moment or two to read about our research and our commitment to the improvement of health by reducing the incidence and the effects of diabetes and cardiovascular disease.

[Garry Jennings AM](#)

[Director, Baker IDI Heart and Diabetes Institute](#)

Chairman's Report



Baker IDI was formed just 12 months ago with a remit to strengthen the battle against the emerging epidemics of obesity, diabetes and their consequences – heart, stroke and vascular disease. It was created from the merger of the Baker Heart Research Institute, one of the world's leading cardiovascular research organisations for over 80 years, and the International Diabetes Institute (IDI), for 25 years a leading force in diabetes research, education and care.

Bringing these two institutes together makes sound health, scientific and economic sense: diabetes is the major epidemic of our time, with one in three adults already with type 2 diabetes or a state known as pre-diabetes. Most people with diabetes, be it type 1 or type 2, do not suffer ill health or premature mortality because of their diabetes; the most life-threatening complications of diabetes are heart, stroke and vascular disease. Kidney disease is also a great threat to health for those with diabetes, and stroke and heart disease affect a frightening number of families, even when diabetes is not present. The research efforts and concerns of the Baker and of IDI dovetailed so perfectly with these

rapidly growing health issues that bringing our two groups of scientists and other staff together was clearly an excellent fit.

Furthermore, diabetes and heart disease are pressing social and health concerns in Indigenous Australia – an area of particular focus for Baker IDI. Part of Baker IDI's commitment to improving rates of diabetes and cardiovascular health means acknowledging the shocking disparity that exists in disease within our own, and the international community. The fact is that we have much to be proud of in Australia but the health of the nation's Indigenous population remains sorely neglected. In terms of cardiovascular disease alone, mortality rates in Aboriginal communities are three times the rest of the population, and diabetes and kidney disease are endemic. Life expectancy is 20 years less than the Australian average – the median age of death is just a little over 50 years. Only 2-6 per cent of indigenous Australians are aged over 65. Elders cannot lead their communities because so many of them have passed away before their prime. As part of our mission to reduce death and disability from diabetes and heart disease, the Baker IDI facility in Central Australia is an initiative committed to addressing this inequality. Our program in Alice Springs is conducted in close consultation with local communities, working with existing services and designed to have an effect on diabetes and vascular health while improving mortality rates in future generations. It is a program we are passionate about and without which our expressed concern about diabetes and heart, stroke and vascular disease would be hollow.

Diabetes and heart disease are also a leading cause of premature ill health and mortality in developing nations around the world. Baker IDI has an important suite of international research collaborations and pursuits that are aimed at addressing inequalities in health outcomes in developing nations.

The critical mass of research expertise and careful focus on disease prevention that we have established in these areas means that Baker IDI is exceptionally well positioned to have an important effect on both reducing rates of disease and improving health.

Long after the present financial crisis has done its worst the world will continue to grapple with the deeper challenges of these lifestyle-related diseases. Without breakthroughs such as those we are providing (some of which are set out in the following pages) health systems will be unable to cope with the consequences. The extra hospital admissions each year alone would fill up a sports stadium or more. The way things are going, our children may be the first generation in recorded history to have a shorter lifespan than their parents. If our recent work in a new science called epigenomics fulfils its promise we may even be able to change the gene function of future generations, impacting their propensity to develop diabetes. Some of our scientists working in this area are uncovering new information on why you are not simply what you eat, you may even be what your grandmother ate. This clearly has a number of implications for the health of our society.

We believe that we have an unparalleled opportunity to make an important contribution to dealing with the worst public health epidemic the world has ever known.

On behalf of everyone at Baker IDI, I would like to express our thanks to all our supporters, volunteers and the important partnerships that make our work possible. I would also like to thank my fellow Board members for all their dedication and support. And thanks as well to the Director, Professor Garry Jennings and all of the staff at the Baker IDI for their continued excellent work in pursuit of our goals.

Robert Stewart

Board Chairman, Baker IDI
Heart and Diabetes Institute

Our Patron

Sir Laurence Muir



During 2008 the Baker Heart Research Institute merged with the International Diabetes Institute. As Patron of the Baker I congratulate Professor Garry Jennings, Professor Paul Zimmet and all concerned with

this successful venture and the creation of Baker IDI Heart and Diabetes Institute.

We now have an Institute dedicated to tackling the deadly trio of obesity, diabetes and heart disease.

I am proud of my long association with Baker IDI, one which has spanned more than 40 years. Here is a vital, dedicated group of people committed to combating cardiovascular disease, diabetes, obesity and their complications at a time when these diseases are at epidemic proportions in our community and around the world. The merged group is one of which we should all be proud and I would like to personally thank our many supporters. We are lucky to be part of many rich partnerships – with The Alfred Hospital, The Alice Springs Hospital, with State and Federal Governments, with corporations and charitable institutions, with the community and our many generous volunteers. These partnerships have enabled us to employ many dedicated scientists and administration staff

in our research laboratories and clinics, all devoted to both clinical and basic research.

Thanks to the brilliance of our scientists and the outstanding leadership of Professor Garry Jennings, Baker IDI is a leading international medical research institute at the hub of a major medical research and creative centre of excellence – the Alfred Medical Research and Education Precinct (AMREP).

It has been a year of expansion and of many successes in the laboratories and the community. I pay tribute to all our partners and offer a sincere thank you to our many supporters. As Patron I congratulate the Board of Management on the smooth merger and for all that has been achieved in 2008. I look forward to sharing in many future successes.

Sir Laurence Muir

Patron, Baker IDI Heart and Diabetes Institute



*Baker IDI South Australian Launch in October 2008.
(Left) Garry Jennings, The Hon John Hill MP, Minister for Health (SA), and Paul Zimmet,
(Right) The Hon Mike Rann MP Premier of SA and Garry Jennings*

Board of Directors

Robert Stewart

Chairman



Rob Stewart was National Managing Partner of Minter Ellison, one of Australia's leading law firms, for 11 years, retiring in June 1999. He spent five years with Pacific Dunlop from 1976 to 1981 in a variety of general management positions within the Footwear Group.

He is Chairman of Melbourne IT Limited, an e-commerce infrastructure company providing key products and services such as domain names on the internet required by companies entering the digital economy; Chairman of Meditech Research Limited, a biotechnology company focused on developing and commercialising drugs that improve the health and quality of life of patients with cancer and other chronic diseases; Deputy Chairman of Emitech Limited, an online advertising and media placement company; Chairman of C E Bartlett, one of the leading manufacturers in Australia of quality products in the fabrication of synthetic and canvas fabrics; and a Director of QSR International Pty Ltd, which produces qualitative research software. He was also a non-executive Director of Memtec Ltd, a high technology filtration company, from 1988 until 1997. Memtec was listed on NASDAQ and then the New York Stock Exchange prior to being taken over by a US company in 1997.

In December 2007 he was appointed to the Board of the International Diabetes Institute. He is also President of the Business/Higher Education Round Table, a member of the Council of Wesley College and a Director of the Australasian Cardiac Surgery Research Institution Limited.

Paula Dwyer

Vice Chairman



Paula Dwyer's background is in investment management and investment banking. In particular, Paula specialised in the provision of corporate financial advice to companies operating in regulated industries, including financial institutions and utilities. She provided corporate advice to major private and government sector clients in areas including the reform of public infrastructure, private sector investment in public infrastructure, mergers and acquisitions advisory and equity capital market raisings. She has extensive experience in the securities and investment industries.

Paula is presently a Director of Tabcorp Holdings Limited, Promina Group Limited (Chairman of the Board Audit, Risk and Compliance Committee), David Jones Limited and Babcock and Brown Japan Property Management Limited.

In December 2007 she was appointed to the Board of the International Diabetes Institute. Past appointments include serving as a Director of RACV Ltd., as a member of the Victorian Casino and Gaming Authority and of the Victorian Gaming Commission, as a Deputy Director of Emergency Services Superannuation, VicSuper and Government Superannuation Office and as a committee member of Chartered Accountants in Business.

Lindsay Maxsted

Honorary Treasurer



Lindsay Maxsted is Director of Westpac Banking Corporation (from 1 March 2008), Director of Transurban Group (from 1 March 2008), Chairman of VicRacing Pty Ltd, Managing Director of Align Capital and Honorary Treasurer of Baker IDI Heart and Diabetes Institute.

Lindsay was the CEO of KPMG from 1 January 2001 to 31 December 2007. During this time, the KPMG Australia business increased its revenue from \$510 million per annum to in excess of \$900 million per annum. At 31 December 2007 KPMG Australia employed 4,700 people. Lindsay's principal area of practice prior to his becoming CEO was in the Corporate Recovery field managing a number of Australia's largest insolvency/workout/turnaround engagements. At the request of the Victoria State Government, Lindsay was on the Board of the Public Transport Corporation from December 1995 and was appointed its Chairman on 1 January 1997. As Chairman, he had the responsibility of guiding the Public Transport Corporation through the final stages of a significant reform process.

John Allen



John Allen is Deputy Chair of Austral Credit Union, Director to Aust Photo Supply and Trustee of Kodak Superannuation Fund.

John concluded a 29 year career with Kodak at the end of 2004, where he had been Chairman and CEO since 1999. His career covered a wide and diverse set of management skills including finance, consumer marketing, divisional and general management. John came to Australia in 1999 to assume the leadership of Kodak Australasia after managing Kodak NZ very successfully from 1992 to 1998.

His particular forte is strategy and business development and he is applying these skills to the companies and other interests he is currently involved with.

He has been Chairman and CEO of Kodak Australia, Director of HPA Pty Ltd and President of Photo Imaging Council Australia (PICA).

Justin Arter



Justin Arter is Managing Director Firmwide Strategy of Goldman Sachs JBWere, and a member of the firm's Board, Management Committee, Risk Committee, Commitments Committee, IT Steering Committee, Compliance Committee and Discretionary Portfolio Service Investment Committee.

Justin graduated from Melbourne University in 1984 with degrees in Law and Commerce. Soon after he completed his Articles of Clerkship, he practised as a solicitor for a short time.

In 1986 he entered the stockbroking industry as a research analyst focusing on food and household goods, entrepreneurs, transport and paper and packaging sectors.

He joined Goldman Sachs JBWere in 1991 as the research analyst responsible for the transport sector as well as BTR Nylex, Foster's Brewing, Southcorp Holdings and the telecommunications and wine sectors. He was voted in numerous surveys as the top analyst in the Transport and Diversified Industrials sectors.

Following research, Justin worked in corporate finance for a short period, primarily on the Telstra 1 Float in both a corporate finance and equity capital markets capacity.

Appointed Head of Research and Strategy in 1998, he formulated equity market strategy. Throughout the time that Justin led this group, the strategy team rated as the number one team in many private and public surveys.

In 2001, he was appointed Joint Managing Director of the Equities Products Group with institutional cash equities, derivatives and research reporting to him.

David Gilmour



David Gilmour is a director and investor in a number of companies. Prior to this he spent nearly 15 years as a management consultant. His most recent consulting position was as a Director and Vice President in the Boston Consulting Group's Melbourne office. David's initial years in consulting were with McKinsey & Company in their Melbourne, London and Madrid offices.

David has an undergraduate degree from the University of Melbourne and an MBA from Monash University, including study at New York University's Stern School of Business. He was the Vice President of the International Diabetes Institute and serves on several other Boards including the Australian International Health Institute, an organisation attached to the University of Melbourne focussed on addressing international health issues in developing countries.

Board of Directors cont.

Prof. Garry Jennings AM



Professor Garry Jennings is Director of Baker IDI Heart and Diabetes Institute's, formed from the merger of the Baker Heart Research Institute, Australia's largest cardiovascular research institute and the International Diabetes Institute in 2008. He is immediate past President of the Association of Australian Medical Research Institutes, former President of the High Blood Pressure Research Council of Australia and Head of World Health Organisation Collaborating Centre for Research and Training in Cardiovascular Health.

A cardiologist, he was previously Director of Cardiology at The Alfred Hospital, Melbourne and Chair of the Division of Medicine.

His research interests have been broad with particular contributions demonstrating the role and mechanisms of exercise in cardiovascular disease and metabolism and the sympathetic pathophysiology of hypertension and heart failure. His other interests have included artery and cardiac structure and function as targets for therapy. He has published several books on heart disease for the general public and over 350 research publications.

Board involvement includes Chair of Nucleus Network and membership of the Boards of the National Heart Foundation of Australia, Research Australia, Osprey Medical Inc, as well as Baker IDI Heart and Diabetes Institute.

Prof. Graeme Ryan AC



Graeme Ryan is currently part-time Director of Research Strategy at The Alfred Hospital. For more than 20 years, Graeme has had senior leadership and management roles in medical research, medical education and health care. These roles include a period of 10 years, from 1986 to 1995, as Dean of Medicine at the University of Melbourne and then, from 1996 to 2000, as Chief of Clinical Services and Board member of the Inner and Eastern Health Care Network, Melbourne.

As well as his role at The Alfred since 2000, he is also currently Chairman of the Board of Directors, Royal Victorian Eye and Ear Hospital, a Governor of the Ian Potter Foundation, Chairman of the NHMRC Special Expert Committee on Transmissible Spongiform Encephalopathies, and a member of the Commonwealth Plasma Fractionation Review Committee.

Peter Scott



Peter Scott leads the Melbourne Investment Banking team of UBS and has more than 20 years experience in providing financial advice to large Australian companies and governments.

He has extensive experience in mergers and acquisitions (including public company takeovers), corporate financial restructuring, joint ventures, asset sales and purchases, public floats, equity and debt issues and privatisations. The sectors and industries in which he has worked with clients include health care, building materials, financial services, manufacturing, media and telecommunications, public utilities, resources and transport.

Peter has been a member of the Takeovers Panel since 2002 and is also a Director of UWC Limited.

Ian Smith



Ian Smith has managed communications strategies on high-profile and complex public affairs projects and domestic and cross-border financial briefs.

He is currently part of the team advising BHP Billiton on its proposal to merge with Rio Tinto and has led the communications strategy for the Australian Government for the Telstra 3 Share Offer, as well as taking a similar role in the Telstra 2 transaction. He has worked more recently on several private equity deals and advised boards and senior executives on reputational issues.

Ian established boutique consultancy Kortlang Melbourne in 1995 before Gavin Anderson & Company acquired Kortlang in 1996. He is now the Executive Chairman of Gavin Anderson & Company in Australia. Ian was a media advisor to the Kennett Government and previously worked with the South Australian Liberal Party. He was a journalist at the Advertiser in Adelaide and the Daily Advertiser, Wagga Wagga.

Ian studied Business and Journalism at the London College of Printing and Journalism. He is Chairman of Jirrawun Arts, an Aboriginal arts organisation based in the East Kimberley and sits on the Board of Media Team Australia. He was formerly a Director of Australian renewable energy company Novera (ASX: NVE).

He is a regular speaker at conferences in Australia and contributes opinion pieces to a number of major Australian newspapers.

Dr. David Thurin



Dr David Thurin has been involved in the property management industry, in particular, the development and management of shopping centres and retirement villages for the past fourteen years. He has worked for property developer the Gandel Group of Companies. David's roles were as a Director for fourteen years and he served as the Managing Director of both the Gandel Group and Gandel Retail Management for six years.

David has a background in medicine and was in private practice for over ten years. He has post graduate qualifications in family medicine and obstetrics and gynaecology, as well as a masters degree in management from Stanford University.

Currently David is Managing Director and Owner of Tigcorp, a company with retirement village assets as well as non property investments. He was the President of the International Diabetes Institute.

Prof. Paul Zimmet AO



Professor Paul Zimmet is the Director Emeritus and Director of International Research, Baker IDI Heart and Diabetes Institute. He also holds the position of Professor (Hon) Monash University, Professor (Adjunct) University of Pittsburgh (USA), Professor (Hon) Deakin University, Victoria and Head, World Health Organisation Collaborating Centre for the Epidemiology of Diabetes Mellitus.

Paul pioneered Australia's first Institute dedicated exclusively to diabetes and became the Foundation Director when the International Diabetes Institute opened in 1984. He was appointed to the Chair of Diabetes at Monash University in 1989.

His research in Australian, Pacific and Indian Ocean populations provided new insights into the genetic and environmental determinants of type 2 diabetes and also brought attention to the global epidemic of diabetes. He led the team that carried out the Australian Diabetes, Obesity and Lifestyle Study (AusDiab), the first national diabetes and obesity study in Australia, in 2000. He has published over 650 scientific papers, chapters and reviews in peer-reviewed journals and books. He is co-editor of the widely used text on diabetes, International Textbook of Diabetes Mellitus and is also co-editor of The Epidemiology of Diabetes.

Board of Directors cont.

Prof. Steve Wesselingh



Professor Steve Wesselingh is Dean Faculty of Medicine, Nursing and Health Sciences, Monash University, Victoria, Australia. Prior to taking up the Deanship in October of 2007, he was Director of the Burnet Institute.

From 1994 to 1997 he was on the Board of the Australian Society for Medical Research (ASMR). In 1998 he was elected President of ASMR and was closely involved in working for the doubling of NHMRC funding (Australian medical research funding) that occurred in 1999. In 1999 he was appointed Professor and Director of the Infectious Diseases Unit at The Alfred Hospital and Monash University.

More recently Steve has collaborated with the Biotech Company Starpharma to develop preclinical and clinical research capacity in the area of microbicide development (funded by a NIH project grant and a NIH clinical development contract).

Internationally recognised as an expert in viruses that affect the human brain, Steve holds major grants from both the National Institutes of Health (NIH) and National Health and Medical Research Council (NHMRC). Steve has a vision of high quality fundamental medical research leading to appropriate biotechnology that will improve the health of Australia and the poorly resourced countries of the region.

David Lloyd

Deputy Director/
Chief Operating Officer



David Lloyd served as Chief Operating Officer of the Baker Heart Research Institute from August 2005, and of the International Diabetes Institute from December 2007. Following the merger of the two Institutes in July 2008 he became Deputy Director/Chief Operating Officer of Baker IDI Heart and Diabetes Institute, with responsibility for finance and administrative operations, commercialisation, clinical and research services, community and public relations, and strategic planning.

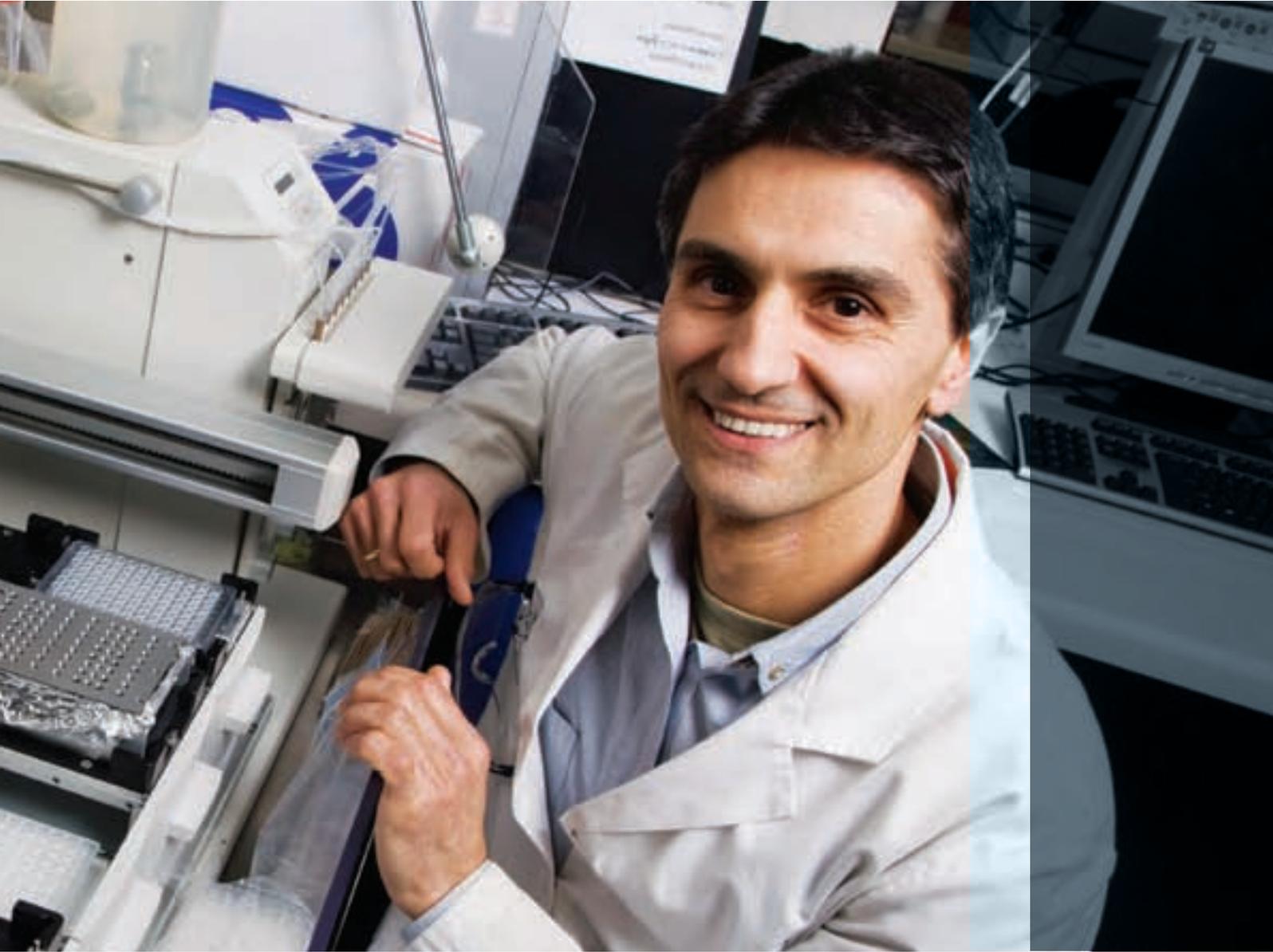
He holds a BA (Hons) in Philosophy from the University of Stirling and a Masters of Public Administration from the University of Tasmania. He began his career in the New Zealand Ministry of Foreign Affairs and then as an analyst and development manager in the New Zealand Trade Development Board from 1986 to 1990.

David moved into higher education administration in 1990, first in the New Zealand Polytechnic Sector and then as Director, International and Commercial Services at the University of Tasmania from 1993 to 1998.

In 1998 he was appointed CEO of Melbourne Enterprises International Ltd, the commercial arm of the University of Melbourne. When Melbourne Enterprises International Ltd merged with Melbourne University Private in 2001 David became CEO of the private university until his appointment to Baker IDI Heart and Diabetes Research Institute in 2005.

David is also a Director of the Chifley Business School, ETM Search and Selection Pty Ltd, Nucleus Network Limited, V Kardia Pty Ltd, ElaCor Pty Ltd and AMREP AS Pty Ltd.





Professor Mustafa Ayhan, Head of Proteomics

Research Themes



Baker IDI comprises five broad themes of research, each of which supports groups of scientists who work in the community as well as researchers who work in a laboratory setting. This bringing together of basic scientists with clinicians and population health researchers is central to Baker IDI's plans as it will ensure that research is directly informed by community needs.

Population Studies & Profiling

This team works to understand the prevalence of disease and disease risk in the population. The focus is on prevention, education and the development of better profiling tools.

Metabolism & Obesity

This group aims to understand the complex relationship between physical activity, weight regulation and the genetic and environmental underpinnings of metabolism to address the many complications of metabolic disorders and obesity.

Diabetic Complications

Diabetes is a chronic, insidious disease on the rise in the community. Among

its many debilitating complications are heart and vascular disease, kidney disease and eye disease. Understanding who is most at risk of the complications of diabetes and discovering ways to mitigate the effects of the disease is this team's focus.

Vascular & Hypertension

This team brings together studies on high blood pressure, kidney disease, the neurobiology of the relationship between depression and heart disease as well as research into the damage to arteries caused by atherosclerosis, and the damage caused by heart attack.

Cardiology & Therapeutics

Heart failure, a devastating complication of heart attack survival and how better to treat atrial fibrillation (where the chambers of the heart beat out of sync) are among the key research areas for this team. The focus is on taking laboratory findings and translating them into better surgical and therapeutic devices for people suffering from heart disease.

As well as these research themes, we have a strong presence in health care and epidemiology here and overseas.

Health Services

A one-stop shop of complete patient care, diagnosis and advice is available under Baker IDI's diabetes and (in collaboration with The Alfred) heart clinics. Being at the frontline of disease care and management will ensure that our researchers closely understand not just the biology, but also the human effects of disease.

Healthy Hearts Clinic

Baker IDI offers free risk assessment to the public by assessing lifestyle factors, medical history, blood pressure and blood sugar level. A visit, including all paperwork, takes 30-45 minutes. Based on participants' results, our staff calculate individual cardiovascular and diabetes risk and provide an overall risk comparison with other Australians of the same age and gender. Health information is stored in a secure database, and participants can choose not to have their results used in research if they wish.



Biobank

The Biobank collects and stores blood samples for research providing scientists with an invaluable store of biological material that provides a “snapshot” of health and disease over time and across different generations. The stored samples can be analysed for genes and other markers associated with cardiovascular disease and diabetes. Baker IDI welcomes participants to this branch of our research, and offers free cardiovascular and diabetes health checks to the public. Those who have their health checked are encouraged to participate in the Biobank. All health information is stored in a secure database and any personal information remains confidential. This service helps our scientists understand human biomarkers and provides them with new targets for disease treatment.

New research areas currently planned for Baker IDI will change the face of diabetes and heart disease research and management. These new projects will allow our dedicated staff to excel in their research fields and provide support to research at every level. State-of-the-art facilities we are establishing include:

New Facilities

- **Metabolomics:** Devising new therapies to combat obesity is challenging due to the complex nature of metabolic disease. To develop treatments for metabolic disorders such as obesity, therapies must first be tested in isolated cell systems before progressing to clinical trials. The knowledge gained through research conducted in our planned new facility will allow researchers to devise more effective prevention and treatments. Once the gene functions and defects implicated in particular diseases are identified, researchers can develop ways to screen people for risk factors, and design remedies that target the causes and complications of the disease.
- **DNA & Blood Profiling:** This new facility is a home to research that aims ultimately to enable medicines to be ‘personalised’. By more effectively understanding the genetic underpinnings of disease, clinicians hope one day to be able to diagnose, treat and care for the patient in a holistic manner. To remain at the forefront of health care delivery in cardiovascular and metabolic medicine Baker IDI will build on its current capabilities, by integrating existing research

disciplines so that health problems are understood and resolved in a way that takes into account individual responses to risk factors.

- **Clinical Metabolism (The Healthy Lifestyle Research Centre):** Diet, exercise and genetics all play important roles in body weight regulation. Nonetheless, it is important to understand the specific underlying causes of obesity, which as yet remain unclear. The Healthy Lifestyle Research Centre will examine how genetic and environmental factors combine to influence body weight. This unique new facility will improve understanding about the effects of physical activity and nutrition for the prevention, management and treatment of obesity and its complications, including diabetes and cardiovascular disease.
- **Medicinal Chemistry:** Medicinal chemistry is the science of providing small, technically accessible but synthetic molecules for use in biological systems to either induce a change to the human system or to better facilitate scientific observations. This new facility will promote and enhance existing Baker IDI research projects by providing scientists with tools they need to further examine particular compounds.

Health and Disease Research



The Healthy Hearts program in action in the community with Professor Simon Stewart

Baker IDI's research agenda is based on the notion of a disease continuum from birth to death, with the aim of preventing the progression of disease at any stage. These themes encompass our activities ranging from cellular and molecular biology, to integrative physiology, population studies, preventative health initiatives and clinical services focussed on.

- **Early life:** and the experiences during pregnancy and infancy that may be a determinant of an individual's propensity to develop diabetes, metabolic syndrome and subsequent cardiovascular disease in middle age.
- **Childhood and adolescence:** with a view to informing policy and developing novel ways of altering the balance in an individual between energy expenditure, food intake and nutrient density, as well as providing better information on optimal diets and physical activity programs.
- **Adults with risk factors:** including assessment of cardiac and metabolic risk; the causes and treatment of the major cardiovascular risk factors particularly diabetes, hypertension and abnormalities of blood fats; and risk factor clusters such as the metabolic syndrome.
- **Sub-clinical organ damage:** with a focus on the time in life when asymptomatic risk factors cause measurable changes in the body, particularly the arteries of the heart, brain, kidneys and eyes.
- **Acute complications:** heart attack, stroke and sudden death; with a focus on understanding the mechanisms underlying the development and rupture of unstable plaques.
- **Clinical complications:** angina, kidney failure, dementia; with a focus on the development of disease management programs, particularly in high risk communities such as the Australian indigenous community.
- **Heart failure and terminal disease:** including work ranging from fundamental research on maintaining the viability and function of heart cells in the context of advanced disease, the prevention of complications of a failing heart such as arrhythmia, the development of new devices to cure atrial fibrillation, and stem cell research to replace damaged heart muscle or help arteries heal.

The Baker IDI Research Lifecycle



Research Highlights



“Many of our findings have important implications for disease prevention and management. They are evidence of the breadth of talent we have at Baker IDI.”

Garry Jennings, Director, Baker IDI

In an extremely productive and successful year for our newly merged Institute, research has continued in a range of areas from cellular and molecular studies to wide-scale community screening and intervention programs, and the translation of some research findings into the next stage of therapy development. Findings have been published in high-impact journals including *The Lancet*, the *New England Journal of Medicine*, *Circulation* and many others.

Some highlights across our research groups include a focus on disease and disease prevention in the following life stages:

Early life

- Description of the molecular mechanism that explains how blood vessels are damaged by prior episodes of high glucose, a well described clinical phenomenon, is now for the first time starting to be unravelled using modern molecular biology.



Childhood and adolescence

- Discovery that a heat shock protein in muscle inhibits inflammation and prevents insulin resistance (pre-diabetes) in the context of obesity and high fat feeding.
- Breaks in sedentary time have beneficial associations with

metabolic risk. These findings suggest new public health recommendations regarding breaking up sedentary time that are complementary to those for physical activity.

Adults with risk factors

- In a *Lancet* publication, data from AusDiab were used to question the basis on which the diagnostic blood sugar levels for diabetes have been set. AusDiab also published the first national statistics in any developed country on the incidence of diabetes, and identified the potential for a novel intervention to improve metabolic health – in addition to reducing total sedentary time.
- A score for assessing the risk of developing diabetes has been developed from AusDiab, which is now being used nationally (and as part of a new Medicare item) to select people for diabetes prevention programs.
- In Victoria, we have been involved in setting up and piloting the WorkHealth program, which aims to screen Victorian workers for cardiovascular disease, diabetes and other chronic diseases over the next five years.
- During 2009 we have been working on the Healthy Hearts: Beyond City Limits with regional partners (including East Gippsland, Shepparton and Ballarat). Thus far more than 2000 community participants have benefited from our screening program and contributed data to help us understand the prevalence of disease in our community and contributing risk factors.
- Discovery that HDL cholesterol has an important role in glucose and fat metabolism. These findings suggest a potential role for HDL raising therapies beyond vascular disease to address key aspects of the metabolic syndrome.



Sub-clinical organ damage

- We developed a new poly-marker approach for the diagnosis of coronary artery disease using urine samples. Using capillary electrophoresis coupled to mass spectrometry we can define proteome patterns that are highly specific for coronary artery disease.
- The demonstration that HDL has profound anti-inflammatory effects on monocytes, helping to explain why this 'good cholesterol' helps avoid atherosclerosis.
- Identification of novel pathways that contribute to myocardial hypertrophy and cardiac fibrosis – key factors in the damaging effects of a large heart.
- The description of the role of two relatively recently discovered proteins, ACE2 and RAGE, which could potentially become new drug targets for cardiovascular and metabolic disorders.
- Discovery that inhibition of the hormone, angiotensin II reduces aortic diameter in patients with Marfan syndrome.
- Discovery that HDL cholesterol has an important role in glucose and fat metabolism. These findings suggest a potential role for HDL raising therapies beyond vascular disease to address key aspects of the metabolic syndrome.

Research Highlights cont.



Acute complications

- Research has uncovered what appears to be the basic cause of heart attack risk in depressive illness. This finding suggests specific treatment to protect patients with depression from heart attack beyond treating their depression alone.
- Development of a novel method for assessing cardiac fibrosis in the human heart using MRI.
- The first application of a medical device developed at Baker IDI into clinical trial, in conjunction with Osprey Medical. The device aims to reduce the number of people with kidney disease who have coronary angiography and subsequently suffer further damage to their kidneys.
- Publication in the *New England Journal of Medicine* of landmark studies on the best drug treatment for diabetes (ADVANCE) and for people at high risk after stroke, heart attack or other vascular event (ONTARGET, TRANSCEND).
- A highly successful international conference, the first of its kind, was organised by Baker IDI and held in Prato, Italy, on the topical subject of the link between stress and heart



Professor Karin Jandeleit – Dahm, Lab Head, Diabetic Complications – Diabetes and Kidney Disease

disease. This conference served to further establish our reputation as leaders in this field.

- Research that has uncovered a new mechanism that may be responsible for Orthostatic Intolerance (OI) is a disordered control of blood pressure that causes recurrent fainting and severe fatigue when people stand up. This discovery will be the basis for new treatments.

Clinical complications

- During 2009 we have continued to support the Heart of Soweto study in South Africa with more than 8000 patients now captured via Africa's largest study of heart disease to date.
- Nucleus Network clearly established as the premier early phase clinical trials organisation in Australia and

the successful opening of a second unit at the Austin.

- Launch of the Heart of the Heart program in Central Australia. Alex Brown and his team have now screened 200 Indigenous adults as part of this landmark study of cardiovascular disease.

International Projects



Director of International Research:
Professor Paul Zimmet

International projects are an important part of our research at Baker IDI. In 2008 our collaborations and research-based interventions in overseas communities with a large diabetes and cardiovascular burden, as well as in communities at risk of a growth in the epidemic of these diseases, expanded significantly and continue to grow with new projects in 2009.

By providing an extension of our research in Australia to vulnerable societies around the world, we are both improving our understanding of health and disease globally and providing a powerful presence in countries that can benefit from our research expertise. It is a major part of our mission to reduce premature ill health and mortality from diabetes and heart disease wherever it occurs. Increasingly, it is a major threat to the future of many developing nations. Research shows too that there is a great disparity in health outcomes between western and developing communities. Poverty is one of the strongest indicators of poor health and it is this inequality we are continuing to address.

“By providing an extension of our research in Australia to vulnerable societies around the world, we are both improving our understanding of health and disease globally and providing a powerful presence in countries that can benefit from our expertise.”

Professor Paul Zimmet, Baker IDI

2008 highlights

Mauritius

A national study of diabetes and heart disease and their risk factors in Mauritius is now in the final stages of planning prior to its launch. The surveillance of over 10,000 people surveyed by Baker IDI between 1986 and 1997 to determine their current medical status and in the case of mortality, the cause of death has now been concluded. This is the largest ever study in a developing country and because of the ethnic mix in Mauritius, is likely to be one of the most important studies of its kind documenting premature ill health and mortality in this multi-ethnic society, as it reflects our global population.

GIANT Study

The GIANT study (General Practice Implementation in Asia of Normoglycaemic Targets) is a randomised controlled trial investigating whether education of local GPs about diabetes guidelines from the International Diabetes Federation – Western Pacific Region (type 2 diabetes practical targets and treatments) leads to improvement in blood glucose control among the GPs' patients. The study has enrolled 10 GPs in each of 10 countries, and each GP has enrolled four patients with type 2 diabetes (400 patients in total). Half of the GPs have received training about the guidelines and half have not. Over a 12-month period, the study will determine if there are any differences in control of diabetes between the two groups of patients. This study is funded by GlaxoSmithKline. GIANT countries include: Korea, Taiwan, Malaysia, Singapore, Thailand, Philippines, Hong Kong, China, Vietnam and Indonesia. The results are currently being analysed.

Heart of Soweto

This landmark study is collaboration between Baker IDI, the University of Queensland and the University of Witwatersrand in South Africa. What

makes the Heart of Soweto study both unique and relevant is that it offers a glimpse of the past, before cardiovascular disease became an international epidemic. The Heart of Soweto study is like a time machine project that allows us to see what we may have missed at the very beginning of the disease process.

The project is charting the emergence of heart disease in the most populous residential area in South Africa, with the highest concentration of blacks in the country. The first findings have recently been published in the medical journal *The Lancet*. One key finding is that most patients had multiple risk factors commonly associated with heart disease in the developed world. For example, many women were obese and more than one in two patients had a history of high blood pressure.

The overall challenge presented by the findings of the study is how to increase scarce health resources to people in developing countries who are presenting with advanced heart disease for the first time. This important project is continuing apace, with results proving to be very useful in informing public health policy.

Rishi Valley, India

The Rishi Valley study is a collaborative project between Baker IDI, Monash University and the Rishi Valley Rural Health Centre. Although the most common causes of disease burden in countries such as India include malnutrition and infectious disease, vascular disease is being increasingly recognised as an emerging epidemic. In urban Indian populations, changes in lifestyle exposures (resembling those seen in developed nations) may underlie this phenomenon. However, even less is known about the burden of vascular disease in those living in rural communities. The aim of this study is to obtain important baseline data on the extent of vascular disease (heart disease and stroke) and its risk factors in a

typical rural Indian community. It will be the first major step in planning effective public health interventions to treat or prevent vascular disease in a disadvantaged Indian community.

Surveillance and Monitoring Function of the National NCD Program of Vietnam

Baker IDI is collaborating with Monash University to conduct this study and relies on three main institutes; the Ministry of Health, Menzies Research Institute and the World Health Organisation. In developing nations, the burden of cardiovascular disease, stroke, diabetes, and cancer is taking over from the traditional problems of infectious disease, of maternal and child illness and death, and of disorders due to under-nutrition and deficiency disease. The burden of the non-communicable disease (NCD) epidemic in Vietnam is accelerating in synchrony with economic development. This study aims to establish a sustainable system for NCD surveillance in Vietnam.

Beijing Collaboration

An institutional affiliation between Baker IDI and Peking University Institute of Health Sciences has existed since 2006. Peking University's Institute of Health Sciences has a very high level and large research group with interests in cardiovascular disease. This area of medical research will become more of a focus in China over the medium term as China is facing significant growth in cardiovascular disease statistics.

In 2008, a group of 18 Baker IDI researchers visited Beijing for a 'Bi-Institute Symposium' which enabled scientists from both countries to compare notes and discuss research activities, and a series of potential joint research projects are now under discussion. It is likely that Baker IDI's plans for 2009 will encompass a proposal to build on this relationship with a focus on joint research initiatives.

Centre for Indigenous Vascular and Diabetes Research



The Baker IDI Facility in Alice Springs

The health disadvantage of Indigenous Australians represents one of Australia's most enduring social and health divides. Cardiovascular disease, diabetes and chronic renal disease are the primary contributors to the 17 year gap in life expectancy between Indigenous and non-Indigenous Australians, accounting for almost 50 percent of the life expectancy differential.

The Centre for Indigenous Vascular and Diabetes Research at Baker IDI is part of the Institute's commitment to improving the quality of life of communities hardest hit by heart disease and diabetes, wherever they are. The Alice Springs team is working towards establishing a long-term, research-led, strategic approach to reducing the burden of these diseases in the geographical heart of the country.

This team is passionately committed to research that works with communities and provides clinical services that meet their needs while better understanding the full scope of the disease burden within them. Baseline

research projects have laid the foundations for service development and trials of new interventions to reduce the burden of, and adverse outcomes from, heart disease in Aboriginal people. Pivotal among the current projects are:

- **The Men, Hearts and Minds Study:** This study has spent the last two years capturing the manifestations and expression of stress and depression in Aboriginal men in Central Australia, and is commencing recruitment of men experiencing heart attacks through Alice Springs Hospital to determine the pathways linking disadvantage, depression and heart disease.
- **The Kanyini Vascular Collaboration:** This is a five year National Health and Medical Research Council Health Services Research Program conducted with Aboriginal communities across the Northern Territory, New South Wales and Queensland in partnership with the George Institute for International Health. The study is aimed at identifying and overcoming barriers to chronic disease care experienced by Aboriginal people.

- **The Heart of the Heart Program of Research:** This multi-project study is aimed at quantifying the burden of heart disease in Aboriginal communities in Central Australia and developing novel approaches to managing elevated risk and documented heart disease. The first element of the program aims to determine the prevalence of heart failure.

- **CASPA Study:** This study aims to assess quality of care available to Indigenous people suffering acute coronary disease, with the objective of identifying barriers to care and weaknesses in service delivery.

- **Health Services Research Project:** Developed in collaboration Institutes, this project involves a partnership with a range of Aboriginal medical services across the country including the Northern Territory. The aim of the study has been to audit the identification, management and treatment of elevated vascular risk, identify barriers to care experienced by Indigenous patients in all settings, and trial a 'poly-pill' mix of Aspirin, Beta-blocker, Statin, and ACE inhibitor in Aboriginal patients to assess its possible preventative significance.

The program of research at Alice Springs currently spans measurement of the burden of heart disease and related conditions. Baker IDI aims to engage constructively and sensitively within the landscape of Indigenous health. The Institute acknowledges a responsibility to identify where its activities can add value to existing research and service delivery activities, and to ensure it contributes to other initiatives.



“Baker IDI’s work in Alice Springs aims to bring the Institute’s resources to bear on the profound disadvantage experienced by Indigenous Australians, and to support the development of relevant health and medical research capacity in Central Australia.”

Dr. Alex Brown, Baker IDI

Baker IDI Diabetes Clinic



“Our approach ensures that a person’s emotional and psychological state, along with their social support systems, are given equal consideration to their clinical care in order to give them the best possible chance to manage their diabetes.”

Associate Professor Johnathan Shaw, Baker IDI

The Baker IDI Diabetes Clinic has developed a model of care that tackles diabetes on a range of fronts, from preventative programs and education through to advanced clinical treatments.

The Clinic in Caulfield, which has more than 5,000 patients and a database of more than 9,000, is the largest dedicated facility of its kind in the country.

It aims to empower patients with the knowledge, support and confidence to take control of their health. All services are located in the one clinic to minimise disruption to patients' daily lives. Services include blood tests, screening for diabetic eye disease, lessons in how to use an insulin pump, counselling sessions for newly diagnosed patients and supermarket tours to learn more about food and nutrition labels.



Diabetes is a chronic disease that requires a co-ordinated management approach. Patients may also face serious complications such as heart disease, kidney and eye problems. Individually tailored treatment plans are therefore required to manage this disease properly and prevent further health problems. These individual plans take into account the patient's social and emotional state as well as their clinical health, drawing from a range of health professions.

The Diabetes Clinic team includes:

- Specialist Physicians
- Dieticians
- Paediatricians
- Counsellors
- Ophthalmologists
- Diabetes Nurse Educators
- Optometrists

This Clinic also provides highly-specialised services for people with pre-diabetes such as those who have impaired glucose tolerance; women who develop gestational diabetes during pregnancy and medical care for children with diabetes.

Research Links

The pioneering research of Baker IDI scientists helps to guide our clinical diabetes specialists in the development of preventative and treatment programs.

For example, ground-breaking research into benefits of resistance training by Baker IDI researchers led to the development of a dedicated exercise program for older people with type 2 diabetes. This program attracted attention from diabetes experts around the world and led Baker IDI specialists to develop a novel fitness regime called "Lift for Life". The program is now offered in gyms and fitness centres across Australia.

New facilities in 2010

The Baker IDI Specialist Diabetes Clinic will move to a new, larger, purpose-built facility in 2010. The clinic will be housed in a state-of-the-art facility adjacent to Baker IDI's Melbourne headquarters within the Alfred Medical Research and Education Precinct in Prahran. It will incorporate the entire medical, educational and diabetes management services that it currently offers at Caulfield. The



Clinic will also provide opportunities to expand current services to include associated complications such as hypertension and heart disease.

The new Clinic will be adjacent to the Healthy Lifestyle Research Centre. The purpose of the Centre will be to integrate novel and different approaches to physical activity and nutrition into daily lives.

The Centre, one of only a handful in the world, will be equipped with cutting-edge facilities: a gymnasium with indoor walking track, clinical testing rooms, a laboratory and metabolic kitchen supported by dieticians and nutritionists. These specialised resources, housed under one roof, will provide the perfect environment for researchers to investigate why diabetes and heart disease have become such deadly problems.

The new facilities will ensure the latest technological equipment and patient comforts are complimented by its pioneering programs for the treatment and management of diabetes.

Nucleus Network



“Every medicine that is sold over the counter or by prescription has been through the most rigorous and thorough clinical testing to establish it is both effective and safe for use.”

Dr. Andrew Giddy, Chief Executive Officer, Nucleus Network



An independent clinical research company of Baker IDI 

Nucleus Network is a wholly owned subsidiary of Baker IDI Heart and Diabetes Institute.

In the last year, and despite some of the difficulties encountered in the international financial environment, Nucleus Network continued to exceed all expectations of growth. It remains the nation's leading early phase clinical trials facility.

Early phase clinical trials are a vital step in the process of bringing new and safe medicines to the community. Every medicine that is sold over the counter or by prescription has been through the most rigorous and thorough clinical testing to establish that it is both effective and safe for use. This critical process is the work of Nucleus Network and the company has earned its international reputation for quality and skill in this area with a highly trained staff and standards that are second-to-none.



Nucleus Network Austin Health Facility

The clinical trials performed at Nucleus Network involve either healthy volunteers or patients with specific medical conditions. Their involvement ensures our work can continue and we are grateful for the time and effort of our participants, all of whom are performing an important community service. Without their support, new medicines would not reach the people who need them.

These clinical trials performed at Nucleus Network – both at our Prahran facility and at our facility at Austin Health – are conducted with an

extraordinary degree of skill, expertise, care and diligence.

The company continues to confirm its place as an industry leader with strict adherence to the highest standards of clinical research, conducted in accordance with international regulatory requirements and expectations. We are committed to best practice industry-wide and have expanded our training for researchers and medical staff involved in clinical trials both here and overseas. Chief Executive Dr Andrew Giddy has built a team of industry-leading professionals in the organisation with a wide range of skills. As such, the staff is able to assist biotechnology companies in the development of new therapies and first-in-man studies.

The aim for Nucleus Network when it started out as a new early phase clinical trials business was to provide a unique service to the pharmaceutical and biotechnology industries in Australia and overseas. Nucleus Network believed that Australia was yet to seize enough of the global market share of clinical research services and as a small fledgling company sought to bring the highest quality, skills and expertise to every stage of early clinical trials.

This unwavering commitment to quality, safety and service, and a dedication to improved health for future generations and for people now, has seen the company grow into a competitive, vibrant entity which has increased its staff threefold and now provides clinical research support to an impressive range of Australian and international businesses. This contribution was recognised when Nucleus Network was a winner in the 2008 Governor of Victoria Export Awards, in the categories of Emerging Exporter and The Victorian Export Award for Innovation Excellence.

Nucleus Network has continued to grow. This is evident not just in an increased capacity for clinical trials – with the \$2.5 million purpose-built

16 bed clinical research centre at Austin Health opened in February 2008 – but with the growth in the company's education and consulting arms. Nucleus Network is also enjoying repeat business from new sponsors in early phase clinical research.



Nucleus Network has been a strong contributor to the development of the clinical research environment and clinical research skills on a national basis. The second Clinical Research Excellence Conference (CRX08) was co-hosted by Nucleus Network and the University of Melbourne in Brisbane in August. The CRX conference brought together some 300 clinical researchers from across Australia with a special focus on indigenous health.

Nucleus Network continued to deliver subsidised Good Clinical Practice (GCP) training courses Australia wide and has now trained over 1000 public hospital and research institute staff in GCP. Nucleus Network has also been a significant contributor, along with other AMREP partners (Monash & Alfred) to the VMIA Research Governance project that aims to provide increased skills and resources to the numerous Research Governance Office's in Victoria's public hospitals.

www.nucleusnetwork.com.au

Intellectual Property

Commercialisation of intellectual property is one of the most effective ways we have of ensuring that knowledge and ideas developed by scientists at Baker IDI are used to improve the quality of life for people living with diabetes and cardiovascular disease.



Dr. Jeremy Jowett, Head, Genomics and Systems Biology

Five key principles inform our approach to technology transfer initiatives. These are considered in every commercialisation venture;

- Attracting commercial funding to support basic research and development.
- Ensuring new ideas are applied and taken up in the commercial world in a way which ensures they are used to improve health.
- Mitigating risks associated with commercialisation pursuits.
- Returning profit from the commercialisation of technology developed at Baker IDI to support future research.
- Providing an appropriate level of personal reward and incentive to individual researchers involved in the development of new technologies.

Our Commercialisation department's activity highlights for 2008 include the appointment of Dr. Michael

Hirshorn to the role of Chairman, Board of Directors of Baker IDI's spin off company, V-Kardia Pty Ltd.

Dr. Hirshorn has extensive experience in the commercialisation of medical devices, having been involved in both the management of, and investment into medical device companies. Currently Managing Director of Four Hats Capital, Dr. Hirshorn has previously been involved in two of Australia's most successful device companies, Cochlear and ResMed Inc. He has significant international management expertise in operational areas from manufacturing to research and development, intellectual property, worldwide marketing and sales, regulatory affairs, government relations, business development and developing strategic alliances with major multinational companies.

Also appointed to V-Kardia's Board is Dr. Martin Devitt. Dr. Devitt has extensive experience with regulatory requirements for medical devices. His expertise encompasses clinical and regulatory input into all aspects of medical device research and development, manufacturing, and commercialisation. This includes clinical trials, clinical evidence, post-marketing issues, health technology assessment of medical devices for reimbursement, quality management system auditing to ISO 13485 and clinical trial auditing.

Osprey Medical Inc, originally founded in conjunction with our researchers in 2005, is a medical device company now based in Minneapolis, USA, focused on inventing innovative catheter systems to address unmet clinical needs.

Osprey Medical Inc continues to pursue commercialisation of the CINCOR™ device for the prevention of contrast induced nephropathy

in susceptible patients receiving imaging contrast agents.

The commercial partnerships we develop through contracts and collaborations provide us with an opportunity to interact with scientists and research in the commercial sector. This is one useful indicator of the currency of our own research and an important source of funding for our research activity. It also ensures our scientific work is connected with and informed by the best science underway in the commercial sector as well as academic scientific mainstream.

The total commercial income generated from partnerships and collaborative ventures with biotechnology/pharmaceutical companies (excluding Institute start up was \$4,773,689 in 2008). In addition we administer 18 patent families that have been filed to protect inventions arising from Baker IDI research.

An additional highlight of our activities in 2008 includes the involvement in the WorkSafe Victoria program. Led by Professor Simon Stewart, Baker IDI researchers provided expertise and practical experience to the roll out of the WorkHealth program. This program aims to screen Victorian employees for chronic disease and associated risk factors with the goal of reducing chronic disease amongst the Victorian workforce.

Baker IDI's work in intellectual property commercialisation is an indication of our commitment to encouraging an atmosphere in which the commercial and community potential of our research is maximised and understood, and in which success is celebrated for the benefits it brings to the community and researchers.



Professor Mark Febbraio, Head, Cellular and Metabolism

Community and Corporate Relations



The Community and Corporate Relations team play an important role in enhancing our relationship with the community. The teams core objective is to increase awareness of the valuable and innovative research being undertaken at Baker IDI and create meaningful partnerships with corporations, individuals, and organisations to support our efforts to be the nation's premier health and medical research institute tackling obesity, diabetes, and cardiovascular disease.

Business Development

Our primary purpose in Business Development is to generate revenue through commercial partnerships. The Institute's expertise is leveraged through commercial activities such as our endorsement of Pacific Brands' Red Robin and Jockey Circulation Socks as well as the range of Diabetes Friendly Footwear developed in association with Homy Ped®.

This activity also serves as an effective mechanism to help ensure that discoveries in our labs are translated into healthier communities. Two programs rolled out in 2008 which specifically address this are *Lift for Life*, and *Reset Your Life*.

Developed by a Baker IDI exercise physiologist, *Lift for Life* is the first evidence-based strength training program specifically designed for people over 50 with type 2 diabetes, and those who are at risk of



developing it. In conjunction with strategic partner, Fitness Australia, this practical and proven fitness regime is now offered in gyms and fitness centres across Australia.

The lifestyle modification program, *Reset your life* is a diabetes prevention program written by nutrition and physical activity experts at Baker IDI. Developed in partnership with the Australian General Practice Network, *Reset your life* is the first Lifestyle

Modification Program accredited under the new type 2 Diabetes Prevention Medicare item in 2008, and is designed to address the growing burden of disease.

Media & Communications

Our Media & Communications service assumes responsibility for generating awareness of the leading edge health and medical research underway at Baker IDI.

Many stories about our research discoveries featured in print, radio, and television media. The media and communications service also facilitates our role in public debate and stimulates discussion around some of the most pressing health issues confronting our community.

Community and Corporate Relations cont.

Relationship Marketing

Building and sustaining meaningful relationships with our donors is a key priority. The Relationship Marketing department focuses on initiatives such as our raffle program, direct mail appeals, and special events.

A highlight of our 2008 events calendar was the inaugural *Baker IDI Heart & Diabetes Institute Gala Dinner*. The attendance of special guests The Hon Nicola Roxon MP, Minister for Health and Ageing, and Premier of Victoria, John Brumby MP enhanced the prestige of the evening. Guests were inspired by the plans for Baker IDI while being entertained by Daryl Braithwaite and former Wiggle, Greg Page.

Confocal – a View Within, co-sponsored by the Institute and the City of Melbourne featured in the atrium of Baker IDI Tower, fused science with art. Artist Danny McDonald created an innovative self-portrait utilising scientific imagery from Baker IDI clinical investigations to represent internal organs and physiological processes within the body.



Confocal art display in the atrium at Baker IDI tower, Commercial Rd, Melbourne

Although not all of our supporters were able to join us at the various events held throughout the year, they certainly demonstrated their belief in our mission by responding to our appeal letters and purchasing raffle tickets. Our raffle program has gone from strength to strength. A highlight of this program was having the winner of one raffle donating the BMW he had just won, back to the Institute as a future raffle prize – a tribute to the generosity that characterises many of our supporters.



Open garden at Cruden Farm

Development

The role of our Development team is to ensure that those who provide support to Baker IDI are themselves supported in the partnership they have chosen to establish with the Baker IDI community.

We acknowledge that the generosity of our supporters comes in the form of monetary contributions as well as gifts of time.

Led by Baker IDI Patron, Sir Laurence Muir, The Friends of Baker IDI are a group of dedicated volunteers who are committed to raising awareness of the work of our Institute. This group organised numerous successful events

throughout the year which included two musical series' and a special event held in the gardens of Cruden Farm, home of Dame Elisabeth Murdoch AC, attended by nearly 4,000 people.

Donors who specifically contribute to our Bright Sparks Program help to support gifted, young scientists who have yet to make their mark. In 2008, donations to this program resulted in 30 early career scientists receiving support from post graduate scholarships through to Fellowship funding. Baker IDI is afforded the opportunity to achieve world-class medical and scientific outcomes because of the generosity of our many donors.

Thanks to our dedicated supporters we are able to actively pursue our mission to improve the quality of life for people now as well as safeguarding the health of future generations. Thank you for participating in the realisation of this world class Institute. We value your support and friendship.

The friends of Baker IDI are:

- Sir Laurence Muir, Patron
- Stephen Cook, Chair
- Bernadette Brodribb
- Robert Lyng
- Yvonne Oeser
- Marion Poynter
- Vivienne Ritchie
- Richard and Jan Santo



Professor Paul Zimmet, The Hon Nicola Roxon, Minister for Health and Ageing, John Brumby The Premier of Victoria, and Professor Garry Jennings at the inaugural Baker IDI Heart & Diabetes Institute Gala Dinner.

“Baker IDI is afforded the opportunity to achieve world-class medical and scientific outcomes because of the generosity of our many donors.”

Sir Laurence Muir, Patron

Supporter Recognition

Major Institutional Support

Albert Einstein College of Medicine
Australian Rotary Health Research Fund
The Baker Foundation
Cardiac Society of Australia & New Zealand
Diabetes Australia Research Trust
Federal Government of Australia
Juvenile Diabetes Research Foundation
Kidney Health Australia
Muscular Dystrophy Association (USA)
National Health & Medical Research Council
National Heart Foundation
National Institutes of Health (USA)
Pfizer Australia Research Foundation
Victorian Government

Major Gifts

Mr Robert Albert
Bertalli Family Trust
Mr E J Eastment
Harbig Family Foundation
Miller Foundation Ltd
Mr Mark & Mrs Dina Munzer
Mr S Baillieu Myer
Mrs Christie Nilsen
Mr Greg Page
Prescott Family Foundation
Mrs Margaret S Ross
Jack & Robert Smorgon Families Foundation
The Victor Smorgon Charitable Fund
Ms Suzanne Sutherland-Smith

Special Gifts

Berwick Opportunity Shop Inc
Mr Geoff & Mrs Sybil Bridges
Caulfield Voluntary Opportunity Shop
Mr Stephen Cook
Mr Les & Mrs Eva Erdi
The Isabel & John Gilbertson Trust
Goldschlager Family Charitable Foundation
Mrs Agota Ivany
Mr Malcolm Kemp
Mr Berry & Mrs Anne King
Mrs Marie Morton
Dame Elisabeth Murdoch AC
Mr Norman J O'Bryan AM & Ms Sue Noy
Mrs & Mr P & N H Peck
Miss Loris N Peggie
Mr Alfred Pizzini
Mrs Lesley Roche
Rotary Club of Melbourne Inc
Mr George Vic Rumbold
Mr Rob Stewart
Miss Peggy Smart

Corporate Support

Apple Telemarketing
Atalina Nominees Pty Ltd
Brian Ward Partners
Casella Wines
CSYS Consulting Services Pty Ltd
Dairy Innovation Australia Ltd
GlaxoSmithKline Australia
Kagan Logistics
Merck Sharp & Dohme
Michaelis Bayley Goldings Pty Ltd
Newmont Mining Corporation
Pacific Brands Limited
Reece Australia Limited
Sanofi-Aventis Australia
Servier Laboratories (Aust) Pty Ltd
SMG European Cars Pty Ltd
Wilbow Group
Woman's Day – ACP Magazines Ltd

Trusts & Foundations

The Baker Foundation
Percy Baxter Charitable Trust
Besen Family Foundation
Rebecca L Cooper Medical Research Foundation
L E W Carty Charitable Fund
The Danks Trust
Marian & E H Flack Trust
Goldman Sachs JBWere Foundation
Blanch B Hutchings Bequest
Ian Potter Foundation
The Pratt Foundation
Ramaciotti Foundations for Biomedical Research
John T Reid Charitable Trusts
The Search Foundation
Southwest Foundation for Biomedical Research
Tattersall's Foundation
The Rocan Trust
George Vowell Foundation
Windermere Foundation
Joe White Bequest

Bright Sparks Program

William Angliss (Vic.) Charitable Fund
The Cybec Foundation
Danar Pty Ltd
The Harbig Family Foundation
Hermods Nominees Pty Ltd
Mr Robert Lyng
Harold Mitchell Foundation
Mr Lynton & Mrs Susan Morgan
Pierce Armstrong Foundation
Mr E & Mrs J Ross
Rotary Club of Mount Waverley
Mr Tony & Mrs Kitty Stewart
Snowy Nominees Pty Ltd

Perpetual Scholarships & Travel Bursaries

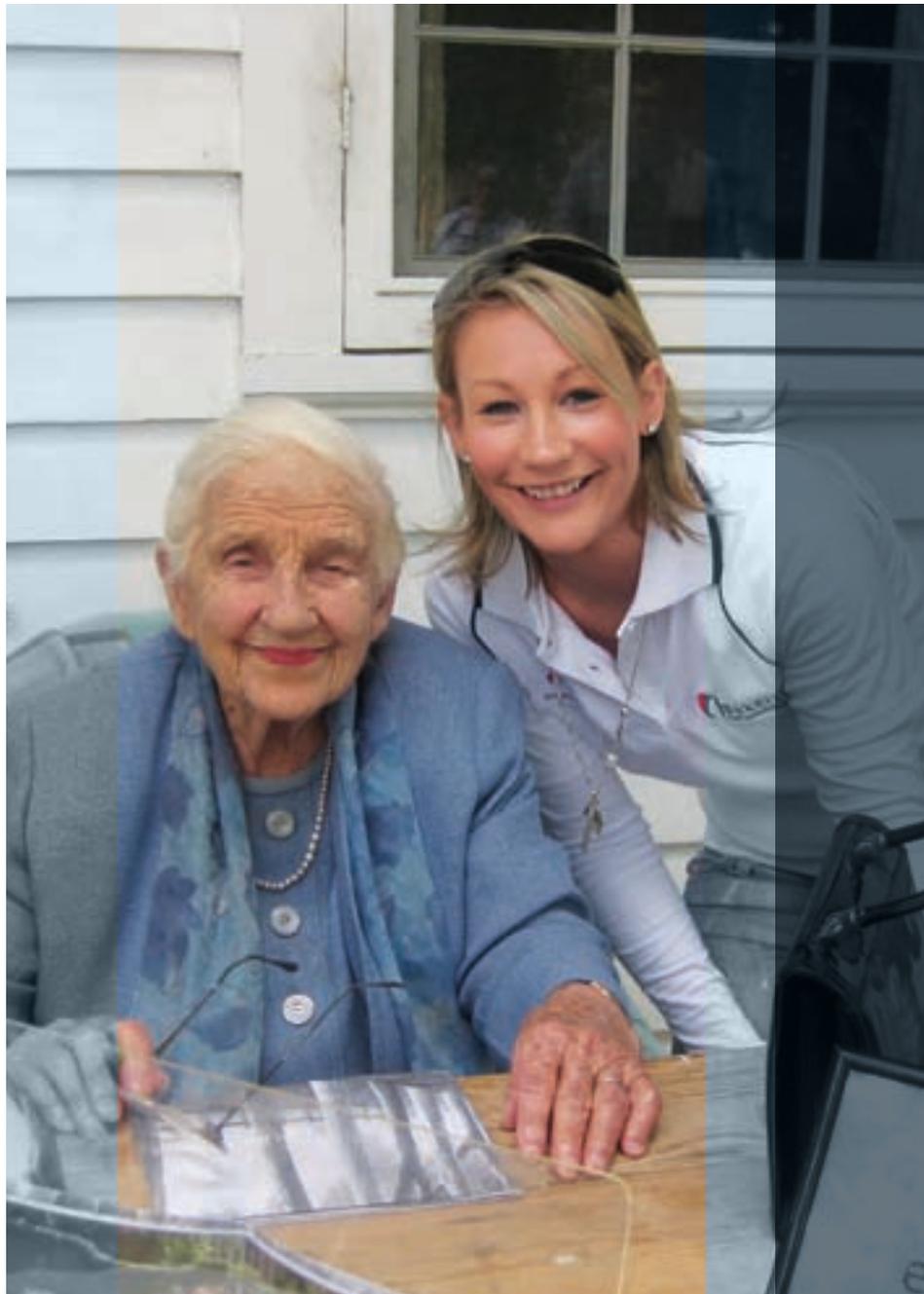
Ethel Mary Baillieu Memorial Trust
Bertalli Family Scholarship Fund
Noel Dickson Scholarship Fund
Robbie Eisner Scholarship Fund
Lang Research Fund
Edgar Rouse Memorial Fund
Ruby Wallace Travel Bursary

Bequests & Bequests in Perpetuity

Hazel & Pip Appel Fund
Baker Institute Grant Trust
Estate Lindsay J Baldy
Bell Charitable Fund
William Buckland Foundation
Thomas, Annie & Doris Burgess Trust
Lesley Dickson Charitable Trust
Grace & Herbert Foulkes Charitable Trust
George F Little Settlement
M A & V L Perry Foundation
George Thomas & Lockyer Potter Trust
Estate E E E Stewart
Estate Alison Woods-Bult

Friends of Baker IDI

Sir Laurence Muir (Patron)
Stephen Cook (Chair)
Bernadette Brodribb
Robert Lyng
Yvonne Oeser
Marion Poynter
Vivienne Ritchie
Richard & Jan Santo



Dame Elisabeth Murdoch AC and Katherine Jedynak, Baker IDI

“By supporting research today, we are investing in the life saving discoveries of tomorrow.”

Leora Harrison, Executive General Manager, Community and Corporate Relations, Baker IDI

Concise Financial Report

Balance Sheet as at 31 December 2008

| | Consolidated | | Parent | |
|---------------------------------------|--------------------|--------------------|--------------------|-------------------|
| | 2008 | 2007 | 2008 | 2007 |
| | \$ | \$ | \$ | \$ |
| ASSETS | | | | |
| Current assets | | | | |
| Cash and cash equivalents | 23,201,105 | 20,298,103 | 18,718,841 | 14,278,281 |
| Trade and other receivables | 8,042,278 | 6,266,736 | 5,219,152 | 2,263,176 |
| Intercompany loan | - | - | 175,000 | 287,978 |
| Available-for-sale financial assets | 15,836,895 | 27,918,900 | 13,767,717 | 24,595,026 |
| Inventories | 29,401 | 48,144 | 29,401 | - |
| Other | 239,129 | 337,355 | 105,856 | 225,555 |
| Total current assets | 47,348,808 | 54,869,238 | 38,015,967 | 41,650,016 |
| Non-current assets | | | | |
| Investment in associates | 3,296,332 | 2,131,015 | 2,047,502 | 1,830,001 |
| Investment in subsidiary | - | - | 360,010 | 360,010 |
| Investments | 52,081 | - | - | - |
| Property, plant and equipment | 50,680,736 | 48,604,753 | 48,349,073 | 45,659,237 |
| Intangible assets | 595,657 | 770,364 | 595,657 | 770,364 |
| Capital works in progress | 575,578 | - | 575,578 | - |
| Prepayments | 10,660,000 | 5,660,000 | 10,660,000 | 5,660,000 |
| Total non-current assets | 65,860,384 | 57,166,132 | 62,587,820 | 54,279,612 |
| TOTAL ASSETS | 113,209,192 | 112,035,370 | 100,603,787 | 95,929,628 |
| LIABILITIES | | | | |
| Current liabilities | | | | |
| Trade and other payables | 9,383,574 | 8,821,665 | 7,735,786 | 5,419,188 |
| Interest bearing loans and borrowings | 360,000 | 360,000 | - | - |
| Unearned income | 16,393,127 | 18,127,310 | 15,704,210 | 15,851,420 |
| Provisions | 4,911,992 | 4,165,148 | 4,415,685 | 3,243,570 |
| Income tax payable | - | 16,208 | - | - |
| Total current liabilities | 31,048,693 | 31,490,331 | 27,855,681 | 24,514,178 |
| Non-current liabilities | | | | |
| Interest bearing loans and borrowings | 690,000 | 440,000 | - | - |
| Lease incentive liability | 172,709 | 13,286 | - | - |
| Provisions | 724,181 | 517,637 | 668,016 | 366,581 |
| Total non-current liabilities | 1,586,890 | 970,923 | 668,016 | 366,581 |
| TOTAL LIABILITIES | 32,635,583 | 32,461,254 | 28,523,697 | 24,880,759 |
| NET ASSETS | 80,573,609 | 79,574,116 | 72,080,090 | 71,048,869 |
| FUNDS | | | | |
| Accumulated funds | | | | |
| Operating fund | 80,573,609 | 74,764,677 | 72,080,090 | 66,082,843 |
| Capital fund | - | - | - | - |
| Specific purpose fund | - | - | - | - |
| Fair value reserve | - | 4,809,439 | - | 4,966,026 |
| Parent interests | 80,573,609 | 79,574,116 | 72,080,090 | 71,048,869 |
| TOTAL FUNDS | 80,573,609 | 79,574,116 | 72,080,090 | 71,048,869 |

Income Statement for the year ended 31 December 2008

| | Consolidated | | Parent | |
|---|-------------------|-------------------|-------------------|-------------------|
| | 2008 \$ | 2007 \$ | 2008 \$ | 2007 \$ |
| Revenue from operating activities | 70,419,469 | 46,924,630 | 52,230,187 | 33,942,861 |
| Revenue from outside the operating activities | 4,870,440 | 6,117,985 | 4,244,494 | 6,409,496 |
| TOTAL REVENUE | 75,289,909 | 53,042,615 | 56,474,681 | 40,352,357 |
| Employee benefits expense | (36,103,461) | (26,837,328) | (26,625,120) | (20,394,895) |
| Laboratory consumables | (9,570,611) | (6,614,335) | (8,014,598) | (5,619,266) |
| Depreciation and amortisation expenses | (3,721,466) | (3,111,736) | (3,020,748) | (2,884,757) |
| Unrealised profit/(loss) on financial assets | (5,703,604) | - | (3,710,895) | - |
| Share of profit/(loss) in associate | 947,816 | 277,717 | - | (23,297) |
| Impairment of assets | - | (31,189) | - | (11,703) |
| Building overheads | (928,365) | (505,552) | (508,147) | (417,477) |
| Borrowing costs expense | (85,370) | (11,305) | - | - |
| Laboratory support expenses | (7,103,118) | (5,357,901) | (4,089,014) | (2,493,851) |
| Loss on deconsolidation of subsidiary | - | (159,776) | - | - |
| Raffle expenses | (1,979,757) | (199,325) | (1,320,643) | - |
| Other expenses from ordinary activities | (5,233,041) | (2,890,643) | (3,188,269) | (1,524,486) |
| Surplus from operating activities before income tax expense | 5,808,932 | 7,601,242 | 5,997,247 | 6,982,625 |
| Income tax expense | - | 42,233 | - | - |
| Surplus from operating activities after income tax expense | 5,808,932 | 7,643,475 | 5,997,247 | 6,982,625 |
| Profit on merger of IDI into consolidated group | - | 7,170,288 | - | - |
| SURPLUS FOR THE PERIOD | 5,808,932 | 14,813,763 | 5,997,247 | 6,982,625 |
| ATTRIBUTABLE TO: MEMBERS OF PARENT | 5,808,932 | 14,813,763 | 5,997,247 | 6,982,625 |

The Balance Sheet provided on the opposite page, together with the above Income Statement and Cash Flow Statement on the following page, have been extracted from the audited general purpose financial statements of the Baker Medical Research Institute and its controlled entities. The summary financial information does not include all the information and

notes normally included in a statutory set of financial statements. A full set of audited general purpose financial statements can be obtained upon request to the Chief Financial Officer.

The statutory financial statements (from which the summary financial information has been extracted)

comply with Australian Accounting Standards to the extent required by the Baker Medical Research Institute Act 1980. The statutory financial statements were unqualified by the auditors Ernst & Young Australia.

Concise Financial Report cont.

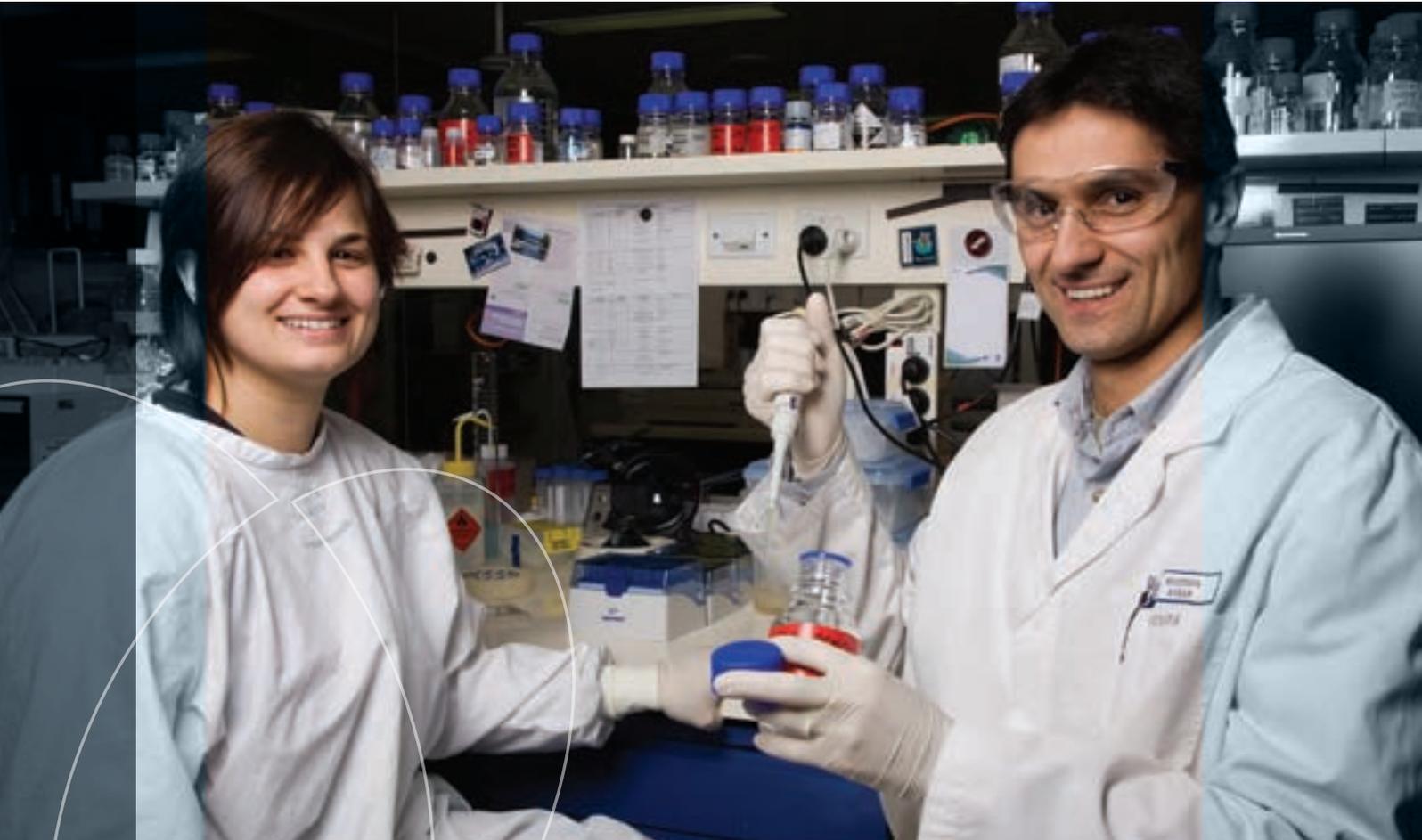
Cash Flow Statement for the year ended 31 December 2008

| | Consolidated | | Parent | |
|---|--------------------|---------------------|--------------------|--------------------|
| | 2008 \$ | 2007 \$ | 2008 \$ | 2007 \$ |
| Cash flows from operating activities | | | | |
| Receipt of grants from government and statutory bodies | 20,765,698 | 18,841,561 | 19,944,556 | 18,450,472 |
| Commonwealth and state government capital infrastructure | 5,000,000 | 14,000,000 | 5,000,000 | 14,000,000 |
| Corporate & private support | 20,337,285 | 12,228,925 | 16,660,059 | 12,228,925 |
| Payments to suppliers and employees | (69,109,401) | (51,357,025) | (47,571,322) | (37,018,913) |
| Borrowing costs | (85,370) | (11,305) | - | - |
| Income tax paid | (48,880) | (16,438) | - | - |
| Dividends received | 1,174,113 | 949,212 | 1,068,780 | 947,904 |
| Interest received | 1,621,522 | 1,009,542 | 1,256,355 | 934,468 |
| Rent received – Baker and Burnet buildings | 729,175 | 1,295,415 | 1,110,294 | 1,295,415 |
| Commercial income | 23,617,947 | 15,272,140 | 8,235,452 | 2,812,555 |
| General income | 2,475,353 | 4,122,264 | 2,242,909 | 2,944,851 |
| NET CASH INFLOW FROM OPERATING ACTIVITIES | 6,477,442 | 16,334,291 | 7,947,084 | 16,595,677 |
| Cash flows from investing activities | | | | |
| Payment for available-for-sale financial assets | (18,579,042) | (27,666,029) | (18,069,101) | (27,638,322) |
| Proceeds from sale of available-for-sale financial assets | 21,170,425 | 22,503,203 | 20,778,557 | 22,923,842 |
| Payment for property, plant and equipment | (6,198,322) | (4,958,436) | (6,111,457) | (2,803,218) |
| Proceeds from sale of property, plant and equipment | - | 83,656 | - | 82,728 |
| Investment in subsidiary | - | - | - | (360,000) |
| Investment in associate | (217,501) | (1,830,000) | (217,501) | (1,830,000) |
| Purchase of convertible notes | - | (35,000) | - | (35,000) |
| NET CASH OUTFLOW FROM INVESTING ACTIVITIES | (3,824,440) | (11,902,606) | (3,619,502) | (9,659,970) |
| Cash flows from financing activities | | | | |
| Proceeds from/(to) related party loan | - | - | 112,978 | - |
| Proceeds from borrowings | 250,000 | 800,000 | - | - |
| NET CASH INFLOW FROM FINANCING ACTIVITIES | 250,000 | 800,000 | 112,978 | - |
| NET INCREASE IN CASH AND CASH EQUIVALENTS | 2,903,002 | 5,231,685 | 4,440,560 | 6,935,707 |
| Cash at beginning of the financial year | 20,298,103 | 9,738,645 | 14,278,281 | 7,342,574 |
| Cash held in IDI at date of merger | - | 5,327,773 | - | - |
| CASH AT THE END OF THE FINANCIAL YEAR | 23,201,105 | 20,298,103 | 18,718,841 | 14,278,281 |





There are many keen cyclists amongst Baker IDI staff who recognise the benefits of physical activity for a healthy lifestyle



Melbourne

75 Commercial Road, Melbourne,
VIC 3004 Australia

T + 61 3 8532 1111

F + 61 3 8532 1100

E melbourne@bakeridi.edu.au

PO Box 6492, St Kilda Road Central,
Melbourne VIC 8008 Australia

Caulfield

250 Kooyong Road, Caulfield,
VIC 3162 Australia

T + 61 3 9258 5050

F + 61 3 9258 5090

E caulfield@bakeridi.edu.au

PO Box 227, Caulfield South,
VIC 3162 Australia

Adelaide

Level 3, 103-195 North Terrace,
Adelaide, SA 5000 Australia

T + 61 8 8462 9720

F + 61 8 8232 4044

E adelaide@bakeridi.edu.au

PO Box 664, Adelaide,
SA 5001 Australia

Alice Springs

Baker IDI Centre for Indigenous
Vascular and Diabetes Research
4/19 Hartley Street, Alice Springs,
NT 0870 Australia

T + 61 8 8959 0111

F + 61 8 8952 1557

E alice.springs@bakeridi.edu.au

PO Box 1294, Alice Springs,
NT 0871 Australia

www.bakeridi.edu.au

© 2009 Baker IDI Heart & Diabetes Institute,
ABN 98 131 762 948. All rights reserved.

© BAKER IDI, BAKER IDI HEART & DIABETES
INSTITUTE and the stylised heart logo are
registered trade marks of Baker IDI Heart and
Diabetes Institute Holdings Ltd.