

Chapter 5

Research institutes, foundations and benefactions

Yvonne Cossart

Foundations and benefactors

Over its 150 year history, many benefactors have supported medical research in the Faculty, both as individuals and by contributions to the named foundations. In some instances their names are linked to specific grants and awards, providing opportunities for new lines of investigation and for the training of young medical scientists to work in specific areas of medical research. No history of the Faculty can be complete without credit being given to those who have raised or donated vital resources to help the Faculty grow. With its foundations, the Faculty now benefits from a capital fund of more than \$150 million in endowments, bequests and scholarship funds, too numerous to list individually. They vary from the profoundly impactful, such as the Bosch Bequest that allowed the formation of the first four research chairs in the Faculty (see Chapter 4), to some with terms so tightly worded that the Faculty has had great difficulty in adhering to the donor's wishes. Important foundations, bequests and major fund raising efforts are listed to show the development of this aspect of support for the Faculty's efforts.

The Faculty is very fortunate that the funding available as interest from bequests and donations now amounts to around \$3 million. It has been a key factor in strengthening research in the Faculty overall and in attracting larger scale funding from government. For almost 50 years, the Medical Foundation has facilitated major new initiatives both on campus and in the clinical schools. Its story and that of some of the 12 other foundations which are focused on individual diseases or patient groups are told in this chapter.

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The Medical Foundation

The Medical Foundation was formally established in 1958 as the Post-Graduate Medical Foundation of the University of Sydney. It was the brain-child of the University's own Faculty of Medicine, with Victor Coppleson, a man of considerable influence and contacts within medical and business circles, the driving force behind its establishment. Coppleson envisaged the



The Medical Foundation Building seen from St John's Road, Glebe

possibility that Sydney could become a major force in medical research and resolved to use his wide contacts in the business world to raise support for this development.

From the outset key companies and individuals from the corporate sector were attracted to the cause. Bill Farnsworth of George Patterson Pty Ltd chaired the Foundation's initial meeting, at which Frank Packer of Australian Consolidated Press was elected the Foundation's first President. Another member of the initial Council was Robert Crichton-Brown of Edward Lumley and Sons (NSW) Pty Ltd, who went on to serve as the Foundation's President from 1975–1987.

Following the death of Victor Coppleson in 1965 a special Memorial Fund raised support for the construction of the 'Victor Coppleson Memorial Institute'. It was opened in 1971 in temporary premises and moved to a long term home in Western Avenue in 1977.

For many years the Women's (Auxiliary) Committee members used their contacts in the social world to raise funds and awareness of the Foundation. Activities that began with humble Christmas card sales, evolved into fashionable events such as a Gala Concert and the Sheepshow Ball. There was much support from country members, at least partly in appreciation of the Postgraduate Committee's educational activities in country regions over the years.

By the early 1980s the Foundation was able to broaden its financial contribution beyond only 'postgraduate' support, and in August 1983 its name was changed to The Medical Foundation, the University of Sydney. Rather than simply funding short term Postdoctoral, Travelling and Medical Research Fellowships, it was able to focus on long term programs. In 1985 this included the funding of the University's Douglas Burrows Chair of Paediatrics and Child Health at a cost of \$1million over five years. By 1995 it was able to ensure its long term funding. Added to this was



View of the Camperdown Campus from the Medical Foundation Building

the Robert W Storr Chair of Hepatic Medicine at Westmead Hospital and the William Chapman Fellowship in Cardiology at Royal Prince Alfred Hospital. In 1995 the first of its five-year senior project grants valued at \$100,000 to \$150,000 per annum per fellowship, was granted. This change brought more senior researchers to the Faculty who in turn attracted extra funding from bodies such as the NHMRC. The Foundation was now hailed as not only as 'one of Sydney's oldest Foundations' but also the 'largest' with accumulated funds of \$21.4 million.

In 2001 the Foundation faced the 21st century with an impressive past financial record and confidence in its future role. That year its budgeted medical research expenditure had reached over \$2.5 million and included allocations to seven current Program Grants and four Special Grants, 12 postgraduate scholarships, as well financing the Douglas Burrows Chair, and the Robert W Storr Chair.

In 2000 the Foundation's President, Peter Burrows, began discussions over the development of a post genomic biomedical research building. The following year the Foundation agreed to invest \$10m in the purchase of the old Worksafe building opposite St John's College on Parramatta Road. The building was opened by the Premier, the Hon Bob Carr on 30 November 2004. The Foundation had provided the Faculty with a major modern facility. It had also acquired a physically identifiable public research presence in the form of the building bearing the Foundation's name.

In 2004 Peter Burrows indicated that he would not stand for re-election. He was followed by John Gregory-Roberts and in 2006 by Richard Caldwell. The Foundation's assets now total \$41million. Its strategic support, with the Faculty, of new research endeavours, including its decision to raise funds for a Chair of Adolescent Medicine, is assisting the Faculty to further strengthen its leading edge research for the benefit of the Australian community.

Abridged with thanks from the History of the Medical Foundation by Tessa Milne.

The Melanoma Foundation

The Melanoma Foundation was established as a foundation of the University of Sydney in 1984. Its objective was to foster prevention, treatment and research into melanoma and related skin conditions. Over the years the Foundation has evolved into the active and effective body that it is today, supporting melanoma research and education in a way that would not otherwise be possible, working closely with the co-located Sydney Melanoma Unit, the world's largest treatment centre for melanoma. This partnership has been vital for the Melanoma Foundation to reach one of its current objectives to "promote, foster, develop and assist within the University of Sydney and elsewhere the study of the causes, prevention and management of malignant melanoma and cancer of the skin".

One of its most valuable achievements is the support of the Sydney Melanoma Unit clinical database, the largest and most comprehensive database of melanoma in the world. This database continues to be used as the basis for clinical studies within the SMU as well as for the continual review of best practice for the diagnosis and treatment of melanoma through evidence based medicine.

Since its inception the Foundation has raised over \$26 million. Following a restructure in 2000 the Foundation has generated almost \$16 million in income with approximately 28% from clinical trials, 31% from grants and 40% from fundraising and bequests. Donations and bequests are predominantly from the many supporters, relatives and friends who have been touched by this most Australian cancer.

Hoc Mai (the Australian Vietnam Medical Foundation)



Hoc Mai

'Hoc Mai' is a Vietnamese phrase that translates into English as 'forever learning'. It has been chosen as the name for the Australia Vietnam Medical Foundation.

Hoc Mai was established in 2001 as a Foundation of the University at the instigation of Bruce Robinson to foster medical education between Australia and Vietnam. The Foundation was launched at Government House, Sydney in August 2001 and brings together the collective medical knowledge of the two countries.

The Foundation expands on the voluntary work done in Hanoi by the Northern Clinical School based at Royal North Shore Hospital. The initiative is a two-way exchange of teaching and learning between Australian and Vietnamese health care workers. Hoc Mai has plans to expand its program to include mental and public health, and research development.

Hoc Mai has the support of senior doctors and medical professionals in both countries. Her Excellency Marie Bashir AC, Governor of New South Wales, is the Patron. The management of the business affairs of the Foundation is vested in a Board of Governors.

Amongst its achievements:

- Medgnosis, a web-based e-Health application has been developed by Dov Hersh of MedTech Outreach Australia (an Australian NGO) for Hoc Mai. It connects specialists and academics in Sydney with specialists from three hospitals in Vietnam, enabling them to consult each other on complicated cases.
- The opening of Hoc Mai House to provide accommodation for up to 300 people a night; the relatives and friends of patients as well as some patients awaiting surgery. These people previously slept in the grounds of Viet Duc, Hanoi's largest surgical hospital.
- Scholarships to bring young Vietnamese doctors and allied health professionals to Sydney to train for three-month periods. Each scholarship costs \$10,000 (including airfares, accommodation, medical registration, basic expenses) and enables the recipient to work in a major teaching hospital of the University of Sydney.
- Scholarships to allow University of Sydney medical students to go to Vietnam during their summer break and spend time at hospitals in Hue, Danang, Hanoi or Ho Chi Minh City. The students are able to experience at first hand, aspects of health care in a developing country.

The Nerve Research Foundation

The Nerve Research Foundation was established in 1985 to raise funds for research into diseases of the nervous system so that better management and treatment could be developed, and to raise public and medical awareness of these conditions. The Foundation has fostered research efforts into important neurological diseases including Alzheimer's disease, multiple sclerosis, epilepsy, stroke, motor neuron disease, peripheral neuropathy and several hereditary disorders.

In 1995 the Nerve Research Foundation united with the Institute of Clinical Neurosciences at the University of Sydney and Royal Prince Alfred Hospital. The Foundation enjoys a broad base of neuroscience expertise – both clinical and basic – and its research efforts include all branches of neurological disease.

The Ageing and Alzheimer's Research Foundation

The Ageing and Alzheimer's Research Foundation of the University of Sydney (AARF) raises funds to support research at the Centre for Education and Research on Ageing (CERA). It is a multidisciplinary research centre that aims to expand and share knowledge of human ageing, so that the health and quality of life of older people can be improved. It is a joint initiative of the



University of Sydney and Concord Hospital. Research at CERA aims to study why ageing increases the susceptibility to diseases such as Alzheimer's disease and to develop new therapies for preventing and treating illness in older people.

Since its establishment in 1994 AARF has raised nearly \$2 million to address its research objectives. Of note is AARF's support of the Sydney Older Persons Study (SOPS) – a longitudinal study of community-based elderly looking at the risk factors for disability – and its funding of the creation of David Le Couteur's Biogerontology laboratory at the ANZAC Research Institute. In addition, AARF supplements grants obtained from competitive funding bodies, assists in supporting early career researchers, funds pilot projects and ensures the continuing employment of valuable staff.

The Foundation's objectives are:

- to support research into the phenomena of ageing and Alzheimer's disease from the medical, biological, psychological, sociological and epidemiological points of view;
- to support and encourage cooperation between organisations and individuals interested in education and research in the phenomena of ageing and Alzheimer's disease;
- to support, improve and encourage the education of persons seeking to research the phenomena of ageing and Alzheimer's disease and endeavour to provide career support for them.

The Brain and Mind Institute Research Foundation

Diseases of the brain and mind will soon be the main cause of disability in the world. The Brain and Mind Research Institute was founded at the University of Sydney to contribute to the elimination of these diseases, capitalising on the completion of the human genome project and the ever-increasing sophistication of non-invasive brain imaging techniques. The formation of the Foundation to support the Institute in 2003 was guided by Oliver Richter, who introduced David Gonski as Chair together with such luminaries as Robert Johnson, a previous Chair of the Reserve Bank and the pastoralist Tom Cropper as well as Fred Street. These wonderful men all determined to raise substantial amounts of the order of millions of dollars for the establishment of the second stage of the Institute's buildings at Mallet St behind the Royal Prince Alfred Hospital. Six million dollars had already been raised for stage one of the Institute, that was opened by the Governor of NSW Marie Bashir in 2004.



Brain and Mind Research Institute Building

In 2004–05 members of the Foundation made substantial personal contributions to the Foundation amounting to \$1.75 million. In late 2004 Ken Parker, the present Chair of the Foundation, and David Gonski, who retired as Chair on appointment as Chancellor of the University of NSW, met with the Prime Minister to promote the Institute's capital works program for stage two; in addition Ken Parker introduced the Minister for Education and Science Brendan Nelson, to the Institute's activities. As a result of these initiatives the Foundation received \$5 million from the Department of Health and Ageing in early 2005 as well as \$2 million from the Department of Education and Science.

Further substantial amounts from both members of the Foundation and the Federal Government are in the process of being raised in 2006 through the great efforts of Ryan Stokes, Chair of the Foundation in early 2005; Ken Parker the present Chair; Tom Cropper; and Robert Johnson.

In two years the Foundation has raised over \$8.75 million. The Institute, University and the wider community are in great debt to the Foundation for these magnificent efforts. It is now up to the researchers of the Institute to make major contributions to the amelioration of brain and mind diseases, so proving that the confidence of the Foundation in its Institute is well placed.

Other foundations supporting the research work of the Faculty include:

- Bone and Joint Research Foundation
- Dermatology Research Foundation
- EAR (Ear and Allied Research) Foundation
- Endocrinology and Diabetes Research Foundation
- Moran Foundation for Older Australians
- Save Sight Institute

Named chairs

Burrows Chair of Paediatrics and Child Health

The Medical Foundation's Douglas Burrows Chair of Paediatrics and Child Health supports research into diseases that cause ill health and death in infants and young children. The Chair was established in 1983 in honour of Douglas Burrows, Chair of the Children's Hospital at Westmead Board of Management and significant supporter until his sudden death in 1982. To date there have been three professors to hold the title of Douglas Burrows Professor of Paediatrics and Child Health: Kim Oates (1985–1997); Craig Mellis (1998–2003); Kathryn North (2004–present).

RW Storr Chair of Hepatic Medicine

Late in 1991 Robert Storr contacted the Faculty and the Medical Foundation to advise of his desire to make funds available to the University to support public education about, and research into, cancer; particularly liver cancer from which he suffered. Storr died of liver cancer in 1992 soon after making arrangements to endow a Chair of Hepatic Medicine at Westmead Hospital. Geoff Farrell was appointed in 1993 and continued in the appointment until January 2006, conducting interactive programs of clinical and laboratory-based research for the prevention and treatment of liver disease.

Bosch Chairs



George Henry Bosch, a Sydney businessman, has been the Faculty's greatest benefactor. He was born in Victoria in 1861 but moved to Sydney in 1881 to open a branch of the family watch parts and watchmaker's tools business. The business prospered and Bosch became a wealthy man retiring in 1924. From 1909 he began to dispose of his wealth by supporting various charities, in particular medical research in the Faculty of Medicine.

Through his generosity, full-time Chairs in Histology and Embryology, Medicine, Surgery, and Bacteriology were established between 1927 and 1930. His initial donation was made in 1927 – £25,000 for the endowment of a Chair of Histology and Embryology. This was followed by a donation of £200,000 to provide income for the creation of Chairs in the other three disciplines.

George Henry Bosch

The Bosch Building and nearby lecture theatres, erected on a site adjoining the Blackburn Building in 1965, were named in his honour.

Challis Chair of Anatomy

In 1890 the University received the Challis Bequest worth over £200,000 and established the Challis Chair of Anatomy with the funds. Challis had been a successful businessman in Sydney and pastoralist in southern New South Wales. He left the money to his wife with the stipulation that following her death, it should pass to the University. Today, Challis's name is associated with Chairs of Anatomy, Biology, Civil Engineering, English Literature, History, Law, Jurisprudence, International Law and Philosophy.

Florence and Cope Chair of Rheumatology

In 1981 Dorothy Grace Florence endowed the Foundation Chair of Rheumatology at the University of Sydney with a gift of \$800,000 to the Australian Arthritis and Rheumatism Foundation (subsequently Arthritis Australia). Florence became interested in supporting rheumatology because of her friendship with John Dick-Smith and his wife Maretta. The endowment became known as the Florence and Cope Chair (Cope being in honour of Mrs Florence's uncle, who had left her a legacy which formed the basis of her own investment portfolio). In 1983 Peter Brooks was appointed as the Foundation Professor, a position which he held until 1991. The Chair is currently held by Philip Sambrook.

Kellion Chair of Endocrinology

The Endocrinology and Diabetes Research Foundation was established in 1987 with a generous donation from the late Claude Kellion in memory of his son John, who died from complications of diabetes at the age of 38. Kellion's main wish was that an active research program into diabetes and its complications should be maintained in the University of Sydney and at Royal Prince Alfred Hospital. Its funds provide research support for the Kellion Professor of Endocrinology, Initially John Turtle and more recently Dennis Yue have held the Chair.

Scandrett Chair of Cardiology

In 1996 the National Heart Foundation of Australia (NSW Division), having received funds from the Scandrett family, wrote to the University offering "to subsidise a Department or School of Cardiology". The offer was accepted and the Foundation has made a series of annual grants to the University to assist the Faculty of Medicine to fund a Chair of Cardiology, which has been held successively since 1968 by Paul Korner, David Kelly and David Celermajer.

Plunkett Chair of Molecular Medicine

In 1983, Edward Henry Plunkett (MB BS 1960), a general practitioner in Eugowra 40km from Parkes in central NSW, wrote to the Registrar of the University enclosing a copy of his will that left all of his estate for research into molecular biology at the University. He indicated that his wife



Molecular biology

had made a similar will and that their joint estate totalled at the time just under \$1 million. Upon his death in 1993, his widow Mavis Plunkett, provided the University with a copy of her will in similar terms, and commenced a series of significant, but at the time anonymous, donations for medical research, specifically in the area of molecular biology. Following her death in 2001 the University received the proceeds of her estate, which allowed it to advertise a Chair of Molecular Biology (Molecular Medicine) to which Juergen Reichardt was appointed in 2004.

Parker-Hughes Chair of Diagnostic Radiology
 Arnold Ronald Parker-Hughes of Sydney died in July 1995 and left the University an estate of \$4 million, subject to a life interest in favour of his wife, for the establishment of the Parker-Hughes Chair of Diagnostic Radiology. By 2005 the

University had received some \$6 million to establish a Chair. It is the intention of the Faculty to develop an academic unit around the Chair, using and advancing the latest techniques of medical imaging in the Brain and Mind Research Institute.

Raymond E Purves Chair of Dermatology

The Raymond E Purves Chair of Dermatology was established in 1988 and was the first Chair of Dermatology in Australia. The bequest supports research into dermatology. The Chair will become vacant in May 2006, following the retirement of Ross Barnetson, the current incumbent.

Other bequests

Over very many years in the Faculty of Medicine has been fortunate to receive bequest support for research without the specification that the funds be used to establish professorial positions such as those above. Recent examples include the following:

- Harry and Hilary Bode Bequest "for the purposes of medical research... at the discretion of the Dean of the Faculty"
- Elsie Mary Thompson Bequest for "the promotion of medical research within the Faculty of Medicine"
- Evelyn Pigot Bequest for scholarships to support research

The development of the concept independent medical research institutes concept in New South Wales

As has been outlined in Chapter 4, two of the earliest medical research institutes in New South Wales (Kanematsu and Kolling) were established during the 1930s in relation to teaching hospitals of the Faculty of Medicine. Until then, medical research in New South Wales was mainly conducted by the full-time academic staff in the medical science departments on campus, although their funding allocations were very limited because the University concentrated its resources more on its teaching role. The two hospital-based, but basic science-oriented, institutes pioneered the 'bench to bedside' concept of medical research.

Kolling Institute for Medical Research

Following World War I, the Royal North Shore Hospital Board adopted the principle that "medical research must go hand-in-hand with curative medicine". This led to the establishment of the 'Institute of Pathological (later Medical) Research of New South Wales' in 1920. W W Ingram, anatomical pathologist at the hospital, was appointed Honorary Director and fulfilled this role until he retired in 1974. Financial support came from donations and hospital funds. The 'Kolling' name commemorates Eva Kolling, who made a substantial donation in 1929 in memory of her husband Charles, and left a further bequest on her death in 1941. Biochemical research commenced in 1925 with the appointment of T E Rofe who was succeeded by Rudi Lemberg who was Assistant Director from 1935 until 1972 and maintained his stellar international career working on the biochemistry of haem pigments after fleeing Nazi Europe.

The research direction turned to immunology and cell biology when David Nelson became the first full-time director in 1974. Staff numbers grew to about two dozen as support was increasingly derived from competitive research schemes but involvement in hospital service became more remote. After the untimely death of Nelson in 1981 there was an interval until the appointment in 1994 of Rob Baxter who has overseen great expansion and diversification of research.

There are now almost 120 staff and students, divided into eight research groups: Growth, especially insulin-like growth factor; Cancer Genetics, particularly of endocrine tumours; Perinatal; Renal; Pain Management, Neurogenetics including the genetic basis of hearing loss, Laboratory and Community Genetics; and Cardiac. They are located in the 85-year-old Kolling Institute building and various laboratories scattered around the RNSH campus. Relocation into the RNSH research facility, currently in planning stage, is eagerly awaited.

Kanematsu Laboratories



Fusajiro Kanematsu and his wife

In 1933 the Kanematsu Institute was built as an institute of pathology at Sydney Hospital as a memorial to Fusajiro Kanematsu and his wife. The funds were donated by the Japan-Australia trading company he had founded in 1889. When he died in 1913, Kanematsu bequeathed the firm to his employees. Kanematsu-Gosho is still very active in trade between the two countries. The first Director Keith Inglis, remained an active supporter

of research at the Institute after he was appointed as the first Professor of Pathology in Sydney in 1937, although there were ongoing 'town and gown' rivalries. John Eccles, the next director, was joined by Bernard Katz and both were awarded the 1963 Nobel Prize for their work on the electrophysiology of synaptic transmission. F C Courtice (director 1947–58) and Malcolm Whyte (1960–66) were almost as eminent. Both these directors left the Institute for greater research opportunities at the new Australian National University where Eccles also worked after a period in Otago.

The Kanematsu was the home of the Red Cross Blood Bank during World War II and haematology became the main thrust of research on the appointment of Fred Gunz as Director (1968) with the separation of the routine diagnostic services and the research laboratories. Paul Vincent, appointed director in 1980, maintained the focus on haematological malignancies but had the 14 melancholy task of negotiating the transfer of a much diminished staff to the Central Sydney/Blackburn Campus when Sydney Hospital ceased to be a general hospital in 1982. The identity of the Kanematsu has been its focus on molecular aspects of leukaemia and related malignancies.

Children's Medical Research Institute



The present free-standing institute on the Westmead campus, which is home to almost 120 staff, evolved from small beginnings. On his retirement in 1958, Lorimer Dods started a foundation to raise funds for research at the Royal Alexandra Hospital for Children in Camperdown and in the neonatal units associated with the obstetric hospitals.



Lorimer Dods

This Children's Medical Research Foundation supported specific clinical research projects in rubella, anaemia and care of premature babies. The groups were soon brought together under the direction of John Harley, but the work and administration were disrupted by closure of Crown Street Hospital and repeal of the Royal Alexandra Hospital's Act of Parliament in 1984.

The Foundation was then reconstituted as an independent entity under the direction of Peter Rowe who had been appointed as the Lorimer Dods Professor in 1980. He encouraged fundamental scientific work on the molecular basis of growth and development and the application of the basic concepts and techniques arising from this research to diagnosis, management and prevention of childhood diseases. A research

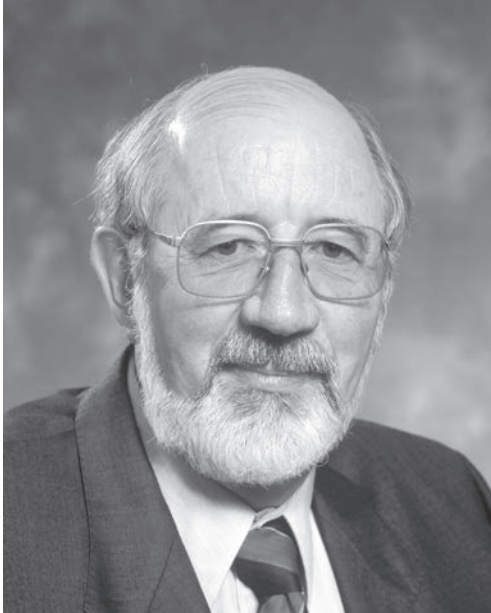
building was constructed in the Camperdown hospital grounds but was scarcely occupied before a second relocation was necessary in 1992 when the entire hospital was moved to its present site at Westmead. It now occupies modern research facilities between Westmead Hospital and the Children's Hospital at Westmead with strong links to both their associated clinical schools of the Faculty. Rowe will retire in 2006.

The Institute houses the Australian Cell Bank which is supported by the NHMRC, Cure Cancer and the National Breast Foundation funds. It accepts responsibility for research students from University of NSW and University of Newcastle, as well as from the University of Sydney.

A W Morrow Gastroenterology and Liver Centre

The Centre was founded at Royal Prince Alfred Hospital in 1948 to support research in what was then an emerging clinical specialty. It was named in honour of its first director William Morrow, a leading gastroenterologist who, with Stan Goulston pioneered the introduction of endoscopy in Sydney. He was succeeded in turn by Alan Skyring and Neil Gallagher. The present director is Geoff McCaughan.

The Centre operates in close contact with gastroenterology clinical services and the liver transplant and liver cancer groups in the hospital, as well as having laboratories in the Centenary Institute (see below). It is undertaking basic and clinical research into inflammatory bowel disease, viral hepatitis, cirrhosis and liver cancer and basic research into the immunobiology of liver disease and



Bill McCarthy

liver transplant tolerance. Support for the staff of research nurses, clinical fellows and research scientists is derived from the Bushell Foundation, the NHMRC and other competitive grant schemes.

Sydney Melanoma Unit

In 1961 Gerald Milton moved from Royal Prince Alfred Hospital to set up a sub-unit of the Department of Surgery at St Vincent's Hospital, then a teaching hospital of the University of Sydney. His interest and experience in melanoma extended and, following the advice of John Loewenthal, he began to specialise in the treatment of patients with melanoma. In 1966 he relocated his clinical and research activities to Sydney Hospital and then in 1982 back to Prince Alfred as successive rearrangements in teaching hospital positions

followed the establishment of the medical school at the University of New South Wales and Area Health Service restructuring.

Because the incidence of melanoma was gradually increasing, Milton envisaged the need for a databank to study the natural history of the disease. In 1969, he commissioned Helen Shaw to establish a register of personal and clinical patient data. This has grown to be the largest and most comprehensive of its kind in the world with entries for over 22,000 patients.

Milton was joined first by Bill McCarthy and then by John Thompson. As successive Directors they have worked to expand the clinical and research capability of the unit. The unit brings together surgeons, medical oncologists, pathologists and radiotherapists to achieve the best outcome for individual patients. Its research is mainly epidemiological and the database is providing evidence for preventive and early detection programs. The success of the programs to arouse public awareness is evident in the ubiquitous floppy school hats, now mandatory in most school playgrounds. Following very significant donor support, the unit is about to enter a new phase of development with its projected move to the Mater Hospital to expand laboratory research capability.

Institute of Anatomical Pathology at RPAH

Under successive Directors Vincent McGovern (1977–1980), Alan B P Ng (1980–1995), Peter Russell (1995–2003), Paul McKenzie (2003–current) the staff specialists and clinical academic pathologists associated with the Department of Anatomical Pathology at RPAH have participated

in numerous large collaborative research programs. Most are translational research projects in breast cancer, prostate cancer, gastroenterological tumours and melanoma. Funding sources include the NHMRC and the NSW Cancer Institute.

Institute of Clinical Pathology and Medical Research (ICPMR)

When Westmead Hospital was opened in 1978, its diagnostic services became the responsibility of the ICPMR which was formed from units of the former NSW Health Department Laboratory services and was directed by Harry Kramer. These functions continue under its present director Cres Eastman, but the research interests have broadened to include population studies of iodine deficiency in Australia, aspects of transplant immunology and pollution, and drug and infectious disease monitoring in the environment and community. It makes a major contribution to clinical research in the Western Clinical School and beyond by providing sophisticated screening tests and in-depth investigation of positive samples from study patients. ICPMR incorporates the Western Sydney Area Pathology Service and the Division of Analytical Laboratories. ICPMR is probably best known as Australia's most comprehensive provider of pathology services. As well as servicing hospitals and laboratories in Western Sydney, it provides tertiary services throughout NSW and, where appropriate, throughout Australia and even to some overseas centres. ICPMR staff also have a commitment to fostering excellence in clinical care, public health, teaching, training and medical research. They have been working on issues as diverse as improving the health of children in Tibet to fighting heart disease and cancer, and helping solve crimes. It is a provides comprehensive diagnostic pathology services to hospitals and laboratories in Western Sydney. It is involved in many large scale research programs such as population surveys for thyroid deficiency.



Cres Eastman ameliorating thyroid deficiency in Tibet

Department of Endocrinology at Royal Prince Alfred Hospital and the Kellion Diabetes Research Foundation

Funded initially by a donation from Claude H Kellion, as a land package sold for \$1.3 million, the Foundation-supported research comprises both clinical and laboratory arms. Across the 28 years since 1978 it has supported research programs in diabetes, andrology, growth factors, metabolism, obesity and thyroidology. Directly from the Foundation support in research, four world class researchers evolved and have become professors and leaders in their respective fields (Rob Baxter, Ian Caterson, David Handelsman and Dennis Yue). The current research focus is on diabetes and its complications and endocrine tumorigenesis, particularly prostate and thyroid cancer.

The endocrinology research group was established to act as a focus for the active research program in diabetes and general endocrinology on-site at the University of Sydney and Royal Prince Alfred Hospital. It was led initially by John Turtle (Kellion Professor 1988–2002) who has been followed by Dennis Yue. The resources of the Foundation are commonly used to supplement external grants by supporting postgraduate training in endocrinology, providing scholarships for higher degrees and purchasing key resources and equipment.

The Foundation is currently being linked in with a Centre concept for Diabetes and Endocrinology to formalise the University of Sydney and Royal Prince Alfred Hospital links in endocrinology basic and clinical research, and to help in establishing 'bench to bedside' and translational research. Collaborative work is undertaken with other research groups on site, including pharmacology, hepatology and cardiology.

The research institutes

In 1984, the NSW Government officially encouraged the development of medical research institutes, setting up a research department of St Vincent's Hospital as the Garvan Institute (affiliated with the University of NSW). Another new institute was conceived in 1982 as part of the commemoration of the centenaries of the University of Sydney Medical School and the Royal Prince Alfred Hospital. It was formed around the strong immunology research group of Tony Basten (the Centenary Institute of Cancer Medicine and Cell Biology).

During the last 15 years there has been an explosion in the number of institutes formed. Some such as the George Institute, have been attracted to the Faculty by the example of the existing centres. Others, like the Westmead Millenium Centre and the ANZAC Research Institute, reflect the aspirations and initiatives of their individual Clinical Schools. Many, however, are a response to changes in government funding policies. At exactly the same time, the UK government was forcing some its London-based independent medical research institutes to merge with adjacent multi-disciplinary Universities, the NSW government was introducing a funding scheme that forced similar institutes to be more independent to receive healthy government infrastructure funding.

Woolcock Institute of Medical Research



Ann Woolcock

The Woolcock Institute of Medical Research Limited (known then as the Institute of Respiratory Medicine Limited) was incorporated in 1981 and opened by the then NSW Minister for Health, the Hon R J Mulock, on 22 November 1985.

The Institute was established to facilitate the research activities of staff of the Departments of Respiratory Medicine in the University of Sydney and at Royal Prince Alfred Hospital. In the initial years of its development, research activities within the Institute focused mainly on asthma and allergy. More recently the Woolcock has seen a considerable increase in the scope of its activity and now has active groups with critical mass in physiology, imaging, cell biology, epidemiology, sleep and upper airways, chronic obstructive pulmonary disease, asthma, allergy, cystic fibrosis, smoking cessation and a clinical

trials unit. In addition, the Woolcock has bioengineering capabilities, utilising the latest technology in electronics, software and analysis to make devices in support of research. Its inaugural operating budget was \$73,000, while in 2005 it reached \$6 million with over 50 research projects in progress. Industry now provides 60% of the funding which comes in many forms, from grants to support individual employees or an area of research through to contracted services such as clinical trials and consultancies.

It was originally housed in Page Chest Pavilion at Royal Prince Alfred Hospital. In 1997, the Reid Charitable Trust refurbished premises in Building 82, Royal Prince Alfred Hospital for the Institute. On 31 August 2002, the Institute changed its name to the Woolcock Institute of Medical Research in memory of Ann Woolcock, the founding director. Its present director is Norbert Berend, supported by the Kinsley bequest at the University of Sydney.

Growth of the Woolcock and the refurbishment of the Hospital have forced its fragmentation across the RPA and University of Sydney campuses in 2004. A dedicated research facility will, however, house the Woolcock under one roof. In Glebe Point Road, it will bring together world-class researchers and advanced technologies to support a cooperative, innovative research environment that fosters the sharing of knowledge.



The Woolcock Institute of Medical Research has active associations with Hunter Area Health Service and the University of Newcastle and Liverpool, Concord and Royal North Shore Hospitals. The Woolcock is a company limited by guarantee and is recognised by the NHMRC as an independent research institute and is a member of the Association of Australian Medical Research Institutes. The Woolcock is a major partner in the Cooperative Research Centre for Asthma, which has been expanded and renewed for another seven years as the CRC for Asthma and Airways. The Woolcock has also established

the Australian Centre for Asthma Monitoring for the Australian Institute of Health and Welfare and is the administering institution for the Centre for Clinical Research Excellence in Respiratory and Sleep Medicine.

In 25 years the Woolcock has seen a considerable increase in the scope of its activity and employs over 100 staff. Recent advances from the group include identification of a growth factor receptor which is lacking in bronchial muscle cells of asthmatics and quantification of risk factors for development of childhood asthma. Education and health promotion are also major activities of the Centre while new research initiatives include studies of chronobiology and the effect of sleep deprivation on health.

The Centenary Institute Cell Biology and Cancer Medicine

The Centenary is a corporation established in 1985 under an Act of the NSW Parliament in response to a perceived need to create centres of research excellence in NSW which could be eligible for NHMRC block funding. NSW Health continues to contribute to the operational (general and research infrastructure) costs of running Centenary. Historically Centenary can be regarded as part of the second wave of independent Australian medical research institutes modelled on the highly successful institutes in Victoria. It has generated substantial grant and infrastructure funding to the University of Sydney and RPA Hospital campus.

When it opened in 1989 under the direction of Tony Basten it was based on the Director's Commonwealth Centre of Excellence (the Clinical Immunology Research Centre) comprising 25 staff. For the first 10 years of its existence the research program was exclusively immunological, but has since been expanded to include molecular medicine. The Centenary provides shared core resources to all its staff as well as collaborators from the university, hospital and other research centres locally and interstate. These include a sophisticated SPF level 2 animal facility, a flow



Centenary Institute

cytometry facility and centralised micro-injection service for transgenic mice which are a key resource for studying gene function *in vivo*. It also provides its lecture theatre and associated amenities to university, hospital and external organisations for teaching activities and seminars. The Centenary enters a new phase of its history with Basten's retirement and is presently under its interim director David Burke – a renowned neurophysiologist – who is Dean of Research and Development of the College of Health Sciences and chairs the Faculty's research committee.

Research staff work within a series of programs, currently: B cell biology (Tony Basten); Mycobacterial infection (Warwick Britton); T cell biology (Barbara Fazekas); liver immunobiology (Geoff McCaughan); gene therapy (John Rasko); molecular cardiology (Chris Semsarian); cellular immunology (Jon Sprent).

Several of these groups have strong links with RPAH (McCaughan is Director of the AW Morrow Centre for Gastroenterology and Liver Diseases) and the University (Britton is Head of the Discipline of Infectious Diseases and Immunology as well as Head of the Department of Medicine). The annual budget has doubled since 2000.

Save Sight Institute

The Institute which operates within the environment of the Sydney Eye Hospital was opened in 1985 under the leadership of Frank Billson and with ongoing support from the Lions Club organisation for its work in community ophthalmology. The Eye Bank is its responsibility and as well as providing an essential service which enables 400 corneal grafts to be performed annually, it undertakes research into methods of preserving and culturing corneal cells.

The institute's clinical staff also conduct research and have established leadership in electrophysiological measurement of visual fields (pioneered by Alex Klistorner) and the early detection of glaucoma. They are also actively involved with clinical trials of new diagnostics and therapies.

In 2000 the Sydney Foundation for Medical Research funded a Chair of Experimental Ophthalmology. John McAvoy was appointed and now heads laboratory research in the Institute. His group studies the growth and development of the eye and especially the lens; he will soon be supported by a new appointee.



Frank Billson and patients in Bangladesh

The location in close association with the active clinical work of the eye hospital fosters rapid translation of research findings into clinical practice and allows many trainee specialists the opportunity to participate in research.

Institute of Endocrinology and Diabetes

The Institute of Endocrinology and Diabetes was established at the Royal Alexandra Hospital for Children in 1987 under the leadership of Martin Silink and more recently Chris Cowell. It was re-located with the hospital to Westmead and now includes a large clinical department of

paediatric endocrinology and diabetes and a strong clinical research program. This is focused on diabetes epidemiology – the causes of type 1 diabetes and strategies to prevent it; development of diabetes complications, including genetic mechanisms and insulin resistance. The bone research group is developing imaging techniques to assess paediatric bone and studying the role of exercise in development of bone. The Institute maintains the national database for children receiving Growth Hormone, OZGROW, and participates in the national epidemiology database for children with diabetes.

Heart Research Institute (HRI)

Opened in 1989, the HRI building adjacent to RPAH in Missenden Road is an independent institute with Roger Dean as the founding director. Philip Barter was recruited from Adelaide to act as Director from January 2003, following the move of Dean to become Vice Chancellor of the University of Canberra. The HRI now includes 45 scientists, 15 graduate students, four laboratory and biological support staff and 10 administrative and fundraising staff. Working in seven research groups, their mission is to develop new scientific knowledge that will lead to prevention and early detection of atherosclerosis. The Institute was established as a combined initiative of the National Heart Foundation and cardiologists at RPAH. It was supported by a Commonwealth government bicentenary initiative to further knowledge about the major origin of cardiovascular disease, to improve methods of prevention, diagnosis and treatment and to provide related educational programs. It boasts excellent facilities for cell and molecular biology and for small and medium sized animal research. Funded by research grants, RPAH cardiologists, and fundraising, the Institute has many national and international collaborations. Its main basic research achievements are in the area of lipoproteins and antioxidants and it is clinically active in development of non-invasive tests for vascular disease.

Institute of Clinical Neurosciences at Royal Prince Alfred Hospital

The Institute of Clinical Neurosciences was established under the direction of Jim McLeod in 1991 to provide research and teaching in the field of clinical neurosciences and to investigate and treat diseases of the nervous system. It consists of the Departments of Neurology, Neurosurgery and Neuropathology at Royal Prince Alfred Hospital, together with the appropriate academic and research staff at the University of Sydney. It also includes relevant members of the Departments of Nuclear Medicine, Rehabilitation and Psychiatry and relevant allied health professionals and nursing staff at Royal Prince Alfred Hospital. The current Director is John Pollard.

NHMRC Clinical Trials Centre

The CTC was established in 1988 as a research unit of the National Health and Medical Research Council. It runs large multicentre clinical trials, takes part in trials of national and international

collaborative trial groups and contributes expertise to trials run by others. It also undertakes research into trial methods and reviews evidence from completed trials. For groups wanting to run their own trials, the CTC will advise on trial design or operation, randomise patients or analyse data.

The CTC offers placements for postgraduate students, trains its own staff and runs short courses in the design and conduct of clinical trials as part of its undertaking to train people for Australian medical research.

Core funding is provided by the NHMRC and specific trial projects are funded by a variety of external bodies, including government, public and private institutions and the pharmaceutical industry. The CTC's mission is to achieve best practice in health care and improve outcomes in Australia and internationally through the use of clinical trials research. The Director is John Simes a renowned cancer researcher and the deputy director is the cardiovascular trials specialist Tony Keech.

Australian Centre for Health Promotion

The centre was established in 1990 within the School of Public Health with Don Nutbeam as Director (now acting in the newly-created position of Provost, recently Pro-Vice-Chancellor, College of Health Sciences). Four year start-up funding was provided by the Commonwealth Public Health Education and Research Program to support the development of innovation in health promotion teaching and research. Ongoing funding has come from a NSW Research and Development infrastructure grant and research grants, consultancies, and short courses and workshops. The current Director is Marilyn Wise, and there is one other paid staff member. Each of the Directors contributes significantly to the Centre's work from their substantive roles rather than as 'employees' of the Centre. Located within the School of Public Health at the University, the Centre contributes to the School's work – contributing to graduate teaching in public health, supervising PhDs, course design, and research development. Research includes:

- descriptive studies of incidence, prevalence of public health problems and or associated risk and contributing factors;
- evaluation of health promotion interventions;
- investigation of effective methods to promote health – e.g. intersectoral action, social marketing, policy development and implementation;
- review and development of national/state health and health promotion policy and programs.

The Centre works in partnership with public and private organisations in the fields of public health and health promotion. Current partnerships are with the Australian Indigenous Health Promotion

Network, the NSW Centre for Overweight and Obesity, Human Capital Alliance, and the NSW Centre for Primary Health Care Research.

Family Medicine Research Centre

The Family Medicine Research Centre, incorporating the Australian General Practice Statistics and Classification Centre, was established under the direction of Helena Britt in 1990 at Westmead Hospital; it became an independent University centre in 1998. It operates purely on external funding, mostly non-competitive research funds, from both government and private industry. The Centre is a collaborating centre of the World Organisations of Family Doctors (WONCA). The interdisciplinary team concentrates on health services research and development in general practice. Its BEACH (Bettering the Evaluation and Care of Health) database now includes information regarding more than 700,000 GP-patient encounters. The data are used by government, industry and academic researchers to describe and evaluate the care provided.

Centre for Perinatal Health Services Research

The NSW Pregnancy and Newborn Services Network (PSN) was established in 1991 to assist NSW Health in the planning, coordination and evaluation of care for high risk pregnant women and high risk newborn infants. In 1996 the Centre was established as its research arm with David Henderson-Smart as Director. It conducts research into rates and risk factors for



perinatal mortality and the impact of perinatal conditions on long term developmental disorders in children. It also appraises evidence for the effectiveness and efficiency of various forms of obstetric and neonatal care as part of the Cochrane Collaboration. In 1997, Christine Roberts joined the group as Director of research. The Centre is located in the Queen Elizabeth II Building on campus and is a centre of the Faculty's School of Public Health.

Pain Management Research Institute

The PMRI was established by Michael Cousins soon after his appointment to the Chair of Anaesthesia at the Northern Clinical School in 1991. The initial focus was on clinical and epidemiological research for which it now has an enviable international reputation. It has since

developed very strong basic research into pain pathways (led by Janet Keast) and new treatment options based on molecular studies (directed by Macdonald Christie who heads the basic research program). Behavioural studies and their application to patient management is a major focus, while there are human and animal projects on the pharmacodynamics of local and general anaesthetic agents.

The work of each of the groups is funded by research grants and industry partnerships as well as by public and community donations. The Institute is now a division of the Kolling Institute.

Centre for Infectious Diseases and Microbiology



The Centre arose out of the Institute for Clinical Pathology and Medical Research in 1992 as a Centre of Excellence for the provision of clinical and laboratory services, and to offer internationally competitive educational and research programs in Infectious Diseases and Microbiology. It now comprises CIDM Biomed (directed by Tania Sorrell) and CIDM Public Health (headed by Lyn Gilbert). The Centre is part of the Westmead Millennium Institute. Basic research is being undertaken into mycology and bacterial pathogenesis as well as translational work on the use of novel molecular technologies and Nuclear Magnetic Resonance in diagnosis of infection. The public health group supports epidemiological

and risk assessment studies of important infections and potential agents of bioterrorism. The unit is also home to the NHMRC Clinical Centre of Excellence in Infections and Bioethics in Haematological Malignancies.

Centre for Behavioural Sciences in Medicine

The Centre, directed by Susan Hayes, is located in the Blackburn Building. It has provided a focus for research in the discipline of Behavioural Sciences since 2000, when the former Department of Behavioural Sciences was incorporated into the large Department of Medicine in the Central Clinical School. The Hayes Ability Screening Index is widely used in assessment of intellectual impairment in young offenders and she is currently supervising four PhD students' research projects on psychological aspects of disability. Support is derived from competitive grant schemes and governmental contract research funding. The Centre is active in setting parameters for disability and contributing to social policy and legislation concerning the disabled.

Nepean Hospital Gastroenterology Research Unit

The unit was established in 1994 to create a research environment in a newly established teaching hospital, to be directed by Nicholas Talley. A foundation donation by Janssen Pharmaceuticals and ongoing support by the Nepean Research Foundation, as well as research grants for specific projects, have resulted in over 150 publications and the training of 14 PhD students. Facilities include a laboratory and endoscopy unit. Research interests include diabetes mellitus and obesity in relation to gastrointestinal disease.

ANZAC Research Institute

The ANZAC Health and Medical Research Foundation (the legally incorporated company which operates the ANZAC Research Institute) was established in 1994 when Concord Hospital was transferred from the Commonwealth repatriation system to NSW Health. Strongly supported by the then Dean John Young, it was designed to secure the first dedicated research infrastructure for Concord Hospital and by 1997 – after obtaining Federal and matching State government support (\$3m each) – it appointed David Handelsman (then based at RPA) as Director to design and establish the Institute, which opened in late 2000 in its architectural prize-winning building with two research groups (andrology and neurobiology). Biogerontology, bone biology, cancer pharmacology, vascular biology and two start-up biotechnology companies have now been added. Almost 80 full-time equivalent scientists work in modern laboratories with state-of-the-art equipment. The overarching focus is on ageing, and each laboratory is closely linked with a research-oriented hospital department to ensure effective ‘bench to bedside’ dialogue. Infrastructure support now comes from the NSW Research and Development Infrastructure Grants Program, fundraising and commercialisation. All project specific funds are won from peer-reviewed research grants, and commercial contracts with private and public sector organisations. It is still led by the inaugural director, Handelsman.



The ANZAC Research Institute at Concord Hospital

Centre for Developmental Disabilities

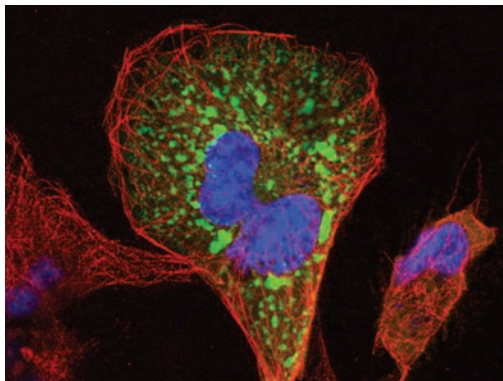
The multidisciplinary Centre, directed by Trevor Parmenter, and located at Royal Rehabilitation Centre Sydney (in Ryde) was established in 1995 with support from the NSW Departments of Health and Community Services and the Motor Accidents Authority. A major impetus was the downscaling of large institutions that cater for the developmentally disabled. The major research areas are service delivery and policy issues of health and community living. Teaching has concentrated on the need to prepare doctors and allied health professionals to meet the needs of those who would increasingly live in the general community.

The Centre has strong links with similar research and development centres in Australia. A health clinic supports general practitioners who generally do not have experience with adults with a developmental disability.

Research output has been consistently high over the Centre's 10 years of operation, but its major handicap is the lack of infrastructure support that limits the Centre's opportunity to prepare grant applications whilst having to engage in income-producing activities to stay in existence.

NSW Breast Cancer Institute

The Institute is a multidisciplinary unit created in 1995 within Sydney West Area Health Service and located at Westmead Hospital. The founding Director is John Boyages and its three programs – Clinical, Research, Education – are 75% funded by NSW Health and 25% by public donations.



Epidemiological research based on the large number of patients in the clinical program (almost 1000 new patients are seen annually) has been focused on prognostic factors, breast conservation and sentinel node biopsy. Recent grants include a joint initiative with the Westmead Institute for Cancer Research for Australia's first breast cancer tumour bank. The Institute has also published widely on hormone replacement therapy (HRT) and breast cancer.

The education program overlaps with research at four-yearly Leura International Breast Cancer Conferences in Australia, which in 2004 registered 728 people. The unit also holds an annual Breast Cancer Public Forum which is broadcast live with Sky Channel across 55 locations across the country and reaches thousands of women. The Institute has also developed a handbook of clinical protocols for breast cancer clinicians and is constantly producing new and updated patient information brochures.

Institute for Magnetic Resonance Research

Founded in 1995 by a group of medical specialists and scientists, under the leadership of Carolyn Mountford, the Institute for Magnetic Resonance Research (IMRR) benefits Australia through researching, developing, applying and commercialising technologies associated with the use of magnetic resonance for the detection, diagnosis and treatment of human diseases.

The Institute has adopted a multidisciplinary approach to the investigation of medical applications of magnetic resonance technology and is currently participating in international trials to determine the clinical benefit of magnetic resonance for healthcare outcomes, and budgets, and to ensure Australia has immediate access to clinical developments in magnetic resonance.

The Institute team is working on the development of suitable devices and protocols for in vivo magnetic resonance to allow the simultaneous identification of spatial location and pathological diagnosis of disease states, and has a commitment to provide world class training in applications of magnetic resonance technology in the field of medicine.

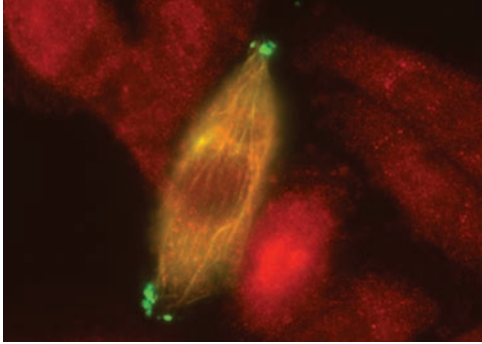
Centre for Education and Research on Ageing

The Centre was established in 1995 to focus on research into ageing and especially dementia, initially under the leadership of Tony Broe. The research interests broadened to include the effects of age-related changes in the liver on metabolism of drugs following David Le Couteur's succession as Director in 2000. The Centre is located at Concord Hospital and is supported by competitive research grants, direct Health Department funding and the Ageing and Alzheimer's Research Foundation (AARF). Currently it is conducting large studies on the epidemiology of ageing and the pathology of degenerative disease of the brain. The educational program targets both the community and the health care professions. The Centre is one of the core members of the ANZAC Research Institute.

Institute for Immunology and Allergy Research

The Institute developed out of the basic clinical research efforts in immunology at Westmead Hospital in 1995 with Graham Stewart as Director. The backbone of funding has been NHMRC and ARC Linkage Project Grants. In addition the Institute has attracted NSW government infrastructure funding since the inception of that scheme. In 1996–2000 the Institute held and administered an Research and Development Grant from the Australian government (\$5.6m). It also receives private donations and partnership grants from industry.

The Institute was one of the four founding groups of the Westmead Millennium Institute. In basic research, it has a particular focus on mechanisms by which inherited variation in the immune response contributes to important human diseases, including autoimmune disease (multiple sclerosis, diabetes), infectious disease (HIV, hepatitis C) and allergic disorders (atopic dermatitis,



asthma). International collaboration ensures the power and replication of these studies. In addition to basic research, the Institute has carried out studies on aerobiology and the affects of airborne allergens on elite athletes under the direction of Connie Katelaris. In recognition of its community responsibilities, the Institute provides pollen count daily for Channel 7 news each year during the peak pollen season.

Westmead Millenium Institute

The foundation of the Institute as a grouping of the four largest research units which had developed in the Westmead Clinical School was catalysed by the appointment of a Professor of Research Medicine in 1996. A NSW Health Infrastructure funding grant supported the construction of a new building on the hospital site. It was opened in 2000 and now houses over 300 research workers. The four foundation groups – virus research led by Tony Cunningham, who is also the Director of the Institute; cancer research led by Rick Kefford; the Storr Liver group headed by Geoffrey Farrell (who leaves us for Canberra in 2006); and the Institute for Immunology and Allergy Research directed by Graham Stewart have since been joined by the Centre for Vision Research, the Centre for Transplantation and Renal Research, the Institute for Dental Research and the Centre for Infectious Diseases and Microbiology. The Millennium Institute is a key component of the Westmead research hub and offers administrative support to other researchers in the clinical school.

Currently the Institute's research continues the themes of the individual groups and many are involved in large multicentre studies in Australia and internationally.



The Westmead Millenium Institute building

National Centre for Immunisation Research and Surveillance of Vaccine-preventable Diseases

The rapidly expanding range of new vaccines for use in persons of all ages, as well as resurgence of traditional diseases such as pertussis, stimulated the establishment of the Centre in 1997, with funding mainly from NSW Health, the Children's Hospital and contract research. The award of a Commonwealth tender in 1999 gave the Centre the security to embark on capacity building for surveillance and mathematical modelling with other units Australia-wide. The first director was Margaret Burgess who was succeeded by Peter McIntyre and his Co-Director Robert Booy in 2005. The Centre is housed in the RAHC research building at Westmead. The 20 research staff work almost entirely on epidemiologic projects but have strong relationships to laboratory research through the national sero-surveillance program and vaccine trials. Research achievements include pioneering adult pertussis vaccine trials, development of the justification for innovations in vaccine schedules, development of new nationally representative reports on the status of vaccine-preventable diseases and evaluation of initiatives in immunisation for Indigenous people.

The George Institute (Formerly the Institute for International Health)

The George Institute for International Health (formerly known as the Institute for International Health) began operating in 1999 with the support of the University of Sydney Faculty of Medicine. The George Institute was established in response to the growing worldwide burden of non-communicable disease and injury, particularly in the Asia-Pacific region. It owed its origins to the vision of its two principal directors and the guidance of John Chalmers. It was established on an independent charitable basis in 1999.

In December 2000 the Institute moved offices from the Royal North Shore Hospital campus to the Camperdown campus at the University of Sydney and established affiliations with Central Sydney Area Health Service (now Sydney South West Area Health Service) and Royal Prince Alfred Hospital. The Institute was renamed The George Institute for International Health in early 2004 to coincide with its move to larger premises in the refurbished King George V building within the Royal Prince Alfred Hospital campus. The Institute has since expanded into a second Sydney office, located in Kent Street and has established an office in Beijing (The China-Australia Partnership for Health and Centre for Evidence-based Medicine). Under the leadership of Principal Directors Robyn Norton and Stephen MacMahon of the Faculty of Medicine, the Institute and its research partners conduct:

- large-scale clinical, epidemiological and health services research studies
- evidence-based health policy development, implementation and evaluation
- capacity building in epidemiology, clinical research, biostatistics and policy development.



George Institute Workshop in China

The Institute uses an Internet-based application as its principal data acquisition tool in its large-scale research activities. Developed in-house, this application provides the full spectrum of data management functions, including data acquisition, validation, registration, randomisation, query resolution and reporting. All data acquisition transactions are encrypted and application systems

are protected by firewalls and secured to industry standards. The application complies with the FDA 21 CFR Part 11 regulatory guidelines and the ICH Guidelines for Good Clinical Practice. All application systems are located in a custom-built data centre and are designed to operate 24 hours, seven days a week. The George Institute collaborates with over 300 hospitals or research groups in 30 countries. These projects simultaneously involve dozens of investigators and as many as half a million participants.

The Institute's activities are organised under Divisions and Programs including: Cardiac and Renal, Injury Prevention and Trauma Care Epidemiology and Biostatistics, Neurological Diseases and Ageing, Mental Health, and Policy and Practice. The China Program supports The George Institute Divisions to conduct their China-based research, policy or capacity building activities in cooperation with Chinese researchers and policy makers. The Operations team provides support to the Institute in the areas of information technology, finance and administration and human resources.

Institute for Bone and Joint Disease

The Institute of Bone and Joint Research (IBJR) was established in 1999 under the leadership of Peter Ghosh to advance knowledge and understanding of the musculoskeletal system and diseases of bone, cartilage and joints, by bringing together the expertise of the Departments of Orthopaedics and Rheumatology. It is located at Royal North Shore Hospital and supported by the Bone and Joint Research Foundation of the University and also more recently the Lincoln Centre. Individual projects are currently funded from industry as well as peer-reviewed granting bodies including NHMRC, Arthritis Australia and the Northern Sydney and Central Coast Health Service.

The IBJR has particular research interests in the areas of osteoporosis, osteoarthritis, rheumatoid arthritis, spinal diseases (disc degeneration) and a focus on the epidemiology, diagnosis, pathogenesis and methods of treating these conditions. Basic and clinical research are presently undertaken in the Departments of Orthopaedics and Rheumatology and their associated laboratories, which include the Raymond Purves Bone and Joint Research Laboratories, Murray Maxwell Biomechanics Laboratory, and Sutton Arthritis Research Laboratories. IBJR also collaborates with the Institute of Magnetic Resonance Research and the ANZAC Institute.

The Institute is entering a new phase of development with the recent appointments of Philip Sambrook to succeed Peter Ghosh as Director, Chris Little to head the Raymond Purves Laboratories and Richard Appleyard to direct the Murray Maxwell Laboratory. Sambrook holds the Florance Cope Chair of Rheumatology, the first chair of rheumatology in Australia.

Australian Health Policy Institute

The Australian Health Policy Institute (AHPI) was established by the College of Health Sciences in 1999 under the leadership of Stephen Leeder (the 16th Dean of the Faculty (1997–2002)). Its purpose is to provide a high-level capability for authoritative, independent, non-partisan analysis of major health policy questions which confront Australian and international health systems. The Institute has four themes: futures, equity, serious and continuing illness, and governance. Institute staff collaborate extensively with government and non-government organisations, locally and internationally, on a range of research projects. Health policy colloquium and seminar programs are also conducted by the Institute to promote academic, professional and public debate on policy issues. The Institute provides an educational capacity in health policy, policy analysis and policy research in the College's teaching programs.

The Australian Health Policy Institute has established a Diabetes Unit to complement existing AHPI programs. The Unit will have an explicit focus on policy, planning and health system reform activities across the continuum of primary, secondary and tertiary prevention in relation to diabetes and associated chronic diseases. In 2006 the Australian Health Policy Institute and the School of Public Health will launch a new postgraduate program in health policy, filling a large gap in current professional training.

Australian Centre for Agricultural Health and Safety

The Centre, which opened in 2001, evolved from initiatives within the Moree Area Health Service to improve the health of people living and working on Australian farms. The founder director is Lyn Fragar. Its core activity is the maintenance of the National Farm Injury Database and the Centre is involved in many specific projects to monitor and prevent accidents and illness related to use of farm machinery, agricultural chemicals and pesticides. Based in Moree, the Centre is

closely linked to the University School of Public Health and also has affiliations with the University Faculty of Agriculture. The Centre's infrastructure is supported by the NSW Department of Health and a partnership with Australian Rural Health Research Collaboration, but most research is supported by specific project grants. The Centre produces many reports and educational publications about health and safety issues for farmers and their families.

Australian Red Cross blood service research Unit of Transfusion Medicine and Immunogenetics

In 2002 the Unit was established under the leadership of Andrew Geczy to formalise a research partnership between the Red Cross and the Faculty's Central Clinical School. The Research Unit, equipped with state-of-the-art facilities, staffed by scientists with diverse skills and with collaborative links with scientists from many institutions, is well placed to tackle fundamental problems in laboratory and clinical medicine.

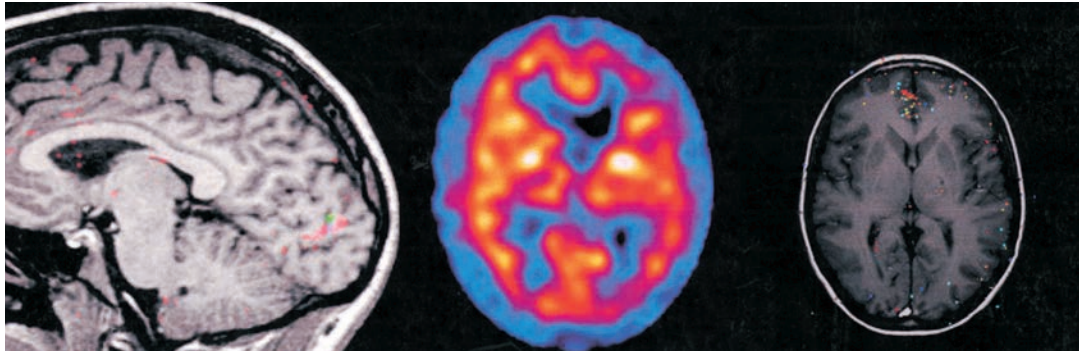
The Molecular Genetics section is using new technologies to focus on immunogenetics, population genetics and anthropology, allowing for the identification and characterisation of many novel gene variants. The Proteomics group has been studying the composition and mechanism of action of blood products to understand mechanisms that underlie adverse reactions to blood transfusions. The Cell and Tissue group studies the functional aspects of transplantation through analysis of cellular cytokine production to understand and predict transplant outcome while the Cell Biology group has produced a range of murine and human monoclonal antibodies for use as diagnostic as well as potential therapeutic agents.

The Viral Immunology group has been investigating immunological responses to viral diseases such as HIV-1, Hepatitis C, and Smallpox, using a novel antibody array technology. The unit offers specialist training for registrars and medical technologists from Australasia as well as from South East Asia.

The Brain and Mind Institute Research Foundation

Neurosciences has been a major strand of research in the Faculty since its inception (see Chapter 3) and over recent years a virtual institute has emerged in Faculty linking the basic sciences with clinical neurology and psychological medicine.

The Brain and Mind Research Institute (BMRI) officially opened in 2004 in its new buildings in Mallet Street, was established to integrate clinical and basic neurosciences research. Through discovery, innovative and integrative research strategies, clinical product development and the application of research initiatives, the BMRI directly benefits people whose lives have been affected by the common and debilitating forms of psychiatric and neurological illness.



Imaging of the brain

BMRI is a multidisciplinary research group located under one roof in a converted factory building in Mallet Street close to the Prince Alfred and University campuses. This initiative stems from the vision of Max Bennett whose own research concerns the mechanisms of nerve transmission and has been brought to fulfilment with the support of John Pollard, a clinical neurologist, and Ian Hickie, a psychiatrist. With Hickie as Director and substantial Commonwealth funding, the first research groups are now moving into the building which is equipped for advanced functional neuro-imaging (under the leadership of Richard Banati of the Faculty of Health Sciences) as well as housing a clinical trials centre. The development of this institute helped faculty recruit a dynamic Alzheimer's researcher, Jürgen Götz from Switzerland. The study of depression will be one of the major themes of the institute in the coming years.

South-West Area Health Service Drug and Alcohol Unit

The Drug and Alcohol Unit commenced with a consultation service for inpatients of Royal Prince Alfred Hospital led by Frank Harding Burns in the 1970s. A detoxification centre (Basement 82) was opened in 1982 and other clinical services followed. An important early study from the unit identified the very high prevalence of alcohol use disorders amongst hospital inpatients. Clinical Psychologist T Sitharthan ran controlled drinking groups and was successful in establishing a Controlled Drinking by Correspondence program for people in rural and isolated areas. Another milestone was the establishment of the pioneering Drugs in Pregnancy Service by Edith Collins. Under the direction of John Saunders the unit was then formally constituted as a research unit with a focus on early intervention led by Kate Conigrave. Paul Haber has been academic head of the unit since 1998 and the unit is actively developing treatment related (pharmacotherapy) research projects.

The changed administrative environment of the University has created a need for grouping of campus based research interests into the Institute model. The Institute for Biomedical Research and the Sydney University Biological Informatics and Technology Centre and the Centre for Values Ethics and the Law in Medicine (below) are all manifestations of this process.

Sydney University Biological Informatics and Technology Centre (Sydney University Prince Alfred Macromolecular Analysis Centre – SUPAMAC

SUPAMAC was formed 10 years ago when researchers at the University and the Royal Prince Alfred Hospital agreed to co-locate expensive high technology DNA analytic platforms to the one location. These cover DNA sequencing, microsatellite analysis, single nucleotide polymorphism testing and denaturing high-performance liquid chromatography. Highly experienced staff operate this equipment and are available to help researchers with their experimental problems, and workshops are held at the beginning of the academic year for new researchers.

SUPAMAC has come a long way since the first few years when the Pro-Vice-Chancellor (Research) needed to subsidise the operation. Today, SUPAMAC makes a small annual profit on its work which is returned to upgrade or purchase new equipment. Over 33,000 specimens were referred to SUPAMAC in 2005 from customers who come from within and external to the University. Royal Prince Alfred Hospital has been a vital supporter of SUPAMAC, coming to its



SUPAMAC

rescue on many occasions. Key players contributing to the development of SUPAMAC over its decade of service include Ron Trent (Executive Director), Bing Yu and Lee Huong (Honorary Consultants), Craig Williams and Evan Dodds (Research Assistants), and Loletta Yuen (Administrative Officer). Nicole Sawyer, the recently appointed Research and Development Director, provides SUPAMAC with a promising long-term future.

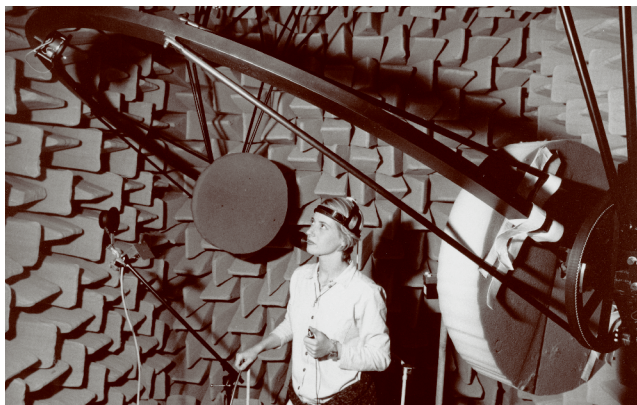
Institute for Biomedical Research

The Institute was founded in 1995 as a way of coordinating the ongoing research in the Faculty's founding disciplines of Anatomy/Histology and Physiology. It is governed by a Board of Directors drawn from science and the community and is guided by an international scientific advisory committee. In 2002 the Institute expanded to incorporate the academic staff of the disciplines of Pathology and Pharmacology. There are also a number of other members, in particular researchers associated with the Central Clinical School.

The current aims and goals of the Institute are encompassed in its Vision Statement (2004):

- To perform high quality research into the normal functioning of the human body
- To perform high quality research into the causes, prevention, detection and treatment of human diseases
- To provide outstanding training for junior scientists in the intellectual, practical and ethical aspects of biomedical research

The central staff of the Institute consists of the Director, Assistant to the Director, Molecular Biology Officer and Microscopy Officer. The research work within the Institute for Biomedical Research is carried out by its members (academic staff associated with the School of Medical Sciences) and others invited to join. There has been a strong growth in the numbers of clinically active researchers from 2003 onwards.



Acoustic chamber for directional hearing,
Institute for Biomedical Research

Members of the Institute produce major contributions to basic medical research across most of the body systems using a wide variety of technologies.

There is no central Institute building and most of the researchers are located in the Anderson Stuart and Blackburn Buildings although some have recently occupied modern laboratories in the Medical Foundation Building. There are

two major multi-user facilities: the Advanced Imaging Facility and Molecular Biology Facility, which contain major items of equipment and are used by over 20 groups throughout the Institute. They are managed by PhD-qualified officers who also perform an important training function. The Institute currently is developing a PC2 facility in the Anderson Stuart Building and a second Molecular Biology facility in the Blackburn Building.

Scientific meetings, which have been held approximately annually since the Institute was founded in 1995, have showcased the work of the Institute's postgraduate students and postdoctoral fellows.



Research in developmental biology,
Institute for Biomedical Research

The annual scientific meeting has been a major intellectual component of the Institute's work. Research students and postdoctoral researchers also organise their own regular seminars and an annual Young Investigator Symposium.

Despite their teaching commitments, the members of the Institute attracted approximately \$18 million in peer-reviewed research funding in 2001–03 and \$4 million from industry. Around

400 scientific articles were published in 2002–2003. Individual members have won many national and international awards for their research achievements.

The Institute for Biomedical Research will soon be known as the Bosch Institute.

Centre for Values, Ethics and the Law in Medicine

The Centre for Values, Ethics and the Law in Medicine, Faculty of Medicine, University of Sydney, was established in 1995 (and recognised as an official University Centre in 1996) because a number of doctors were concerned that health services were failing to deliver what ill people were looking for. It seemed to them that medical science and technology were advancing faster than bioethics and the law, and that rationalist economics and management principles were failing to control the costs of health.

Miles Little was the driving force in its creation and became the first Director. The Centre proposed to fill five major functions: research (predominantly qualitative) and research supervision, advanced education for graduates, consultation on issues beyond those normally tackled by research ethics committees, an intellectual forum for researchers working in areas of wide social interest, and a source of community education. Little raised money from a variety of sources to pay three research salaries, and recruited a voluntary 'Core Group' from interested people of many disciplines, including Medicine, Philosophy, Ethics, Law, Theology, Sociology and Anthropology. The Centre has hosted several visiting scholars from abroad, supervised research students and maintained a stream of scholarly publications in the medical and philosophical literature. Its present director is Ian Kerridge who joined Faculty in 2003. (See Chapter 3).



The role of the institutes

Whilst no one would gainsay the success of some of NSW's medical research institutes, there is considerable debate about how truly independent they are (or should be) from the state's major research intensive universities. From this account it is evident that there are many different models of research centres affiliated with Faculty. Some are relatively independent, although some staff may hold University titles and supervise research students. Others are fully controlled entities of the University, while some are hospital-owned research centres with research affiliations with the Faculty and some are in effect joint hospital-University ventures.

Recent events suggest that the need to stress independence has been removed and in future the institutes will once again be encouraged to develop their strong University affiliations. There is no doubt, however, that the dramatic growth of medical research in the state has come about through the strong growth of the institutes, and they form an essential part of the history of the Faculty of Medicine at the University of Sydney.

