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CHIRON

CHIRON THE CENTAUR, TEACHER OF MUSIC,
MEDICINE AND HUNTING

VOL 4 NO 5

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EDITORIAL

by Professor Neville Yeomans

PROFESSOR OF MEDICINE, WESTERN HOSPITAL; ASSOCIATE DEAN (ACADEMIC PROGRAMS)

FACULTY OF MEDICINE, DENTISTRY AND HEALTH SCIENCES

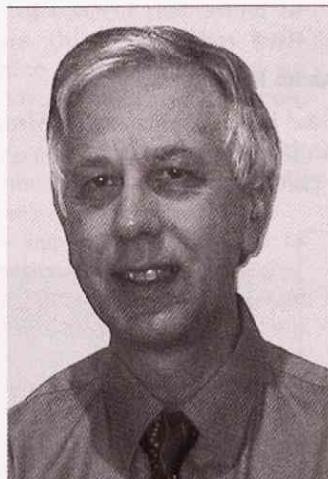
Now is a good time to bring alumni and friends of the School of Medicine up to date on the new medical curriculum. For those who have not already caught up with the overall structure and philosophy, they are:

- a six year program for school leavers, which includes an obligatory year of research in the middle; and a four and a half year program (without the BMedSc year) for graduates
- an integrated curriculum in which students are challenged to learn principles and glean relevant information to solve a clinical problem rather than memorise large amounts of detailed information, often soon forgotten
- clinical contact from the first semester
- more emphasis than before on areas such as human mind and behaviour, healthcare of society and professional development and attitudes.

We are now into the fourth year of the new program. The first class call themselves 'The Guinea Pigs', with wry good humour. They have played an important part in helping the faculty respond quickly to areas of curriculum that have needed fine-tuning. Their enthusiasm for the new learning style has been a source of great encouragement to those who teach and to the students who are following behind them. The old Melbourne course produced terrific doctors—after all, our alumni and many of us on staff are proud products of it. However, most of us had to learn to question and assess the medical literature after we graduated, and clearly we learned, then promptly forgot, many things we would never later use. Those who come in contact with our new students will see a difference.

Every course at the University of Melbourne has to be assessed by the students. Student approval in each semester has been very strong, particularly for the major domain 'Scientific Basis of Medicine'. Students have also found the workload a little more manageable than in the old curriculum. The most recent major subject to have been rolled out—Defence Mechanisms and Their Failure—met with record approval scores from the 'guinea pigs'. That is not to say that everything is perfect. There are still areas needing improvement, and this is an active and ongoing process.

At the time of writing, the school leavers in the pioneering cohort are nearing the end of the Advanced Medical Science (BMedSc) year. The students on our planning teams some years ago talked about this as 'the compulsory year off'. Nothing could



NEVILLE YEOMANS

be further from the truth! This year is one of the features that will define the Melbourne medical graduate of the future (many of those in the graduate stream have already done a year of research, since they entered the course with honours degrees). The faculty website 'AMS Adventures' (<http://www.medfac.unimelb.edu.au/ams/>) gives a good overview of the range of projects available to students and three AMS stories are published in this issue of *Chiron* (pp17-18). Again there is some fine-tuning to do: a few of the programs have been a bit short on genuine research, and we need to closely monitor the quality of overseas programs.

The task consuming us now is the roll-out of the final five semesters. Semester eight begins in July, when the students will be in general teaching hospitals in Melbourne and rural centres. These students have already spent half a day per week on clinical skills during their first five semesters, and the problem based learning (PBL) has given them more understanding of clinical terminology than students in the old curriculum had when they first reached the hospitals. The program in semesters eight and nine will feature learning on the job by attachment to a home ward and clerking patients, just as we have always done in the old fourth year. However, for about half of the week the learning will be much more structured. The PBL approach will continue, with students grappling with core problems that the many discipline groups have identified as essential learning. Topic sessions will make sure that key areas are not overlooked nor overly duplicated. Medicine and surgery are also more integrated than previously, since that is the way most of us in teaching hospitals actually practise.

Many people are contributing to this major exercise, but central to all has been the Faculty Education Unit. This group of very hard-working academics, led by Associate Professor Susan Elliott, has played a pivotal role and brought great professionalism to the process of curriculum development.

The Australian Medical Council sent a team in February to approve (or otherwise) our plans for finalising the new medical curriculum. They congratulated the school on its substantial achievements.

It is a privilege to teach our bright students, and the curriculum revolution is greatly energising this old faculty.

Cover Story

A group of first year 2001 students participate in a clinical training workshop. **Front cover main photo:** Deniz Yaka and Gene-Lyn Ngian. **Front cover top to bottom:** Kirsten Wiend, John Ciciulla, Mospele Mospele, Pavani Sathasivan and Cameron Fairbrother. **Back cover L-R:** Kirsten Weind, Cameron Fairbrother, Mospele Mospele, Gene-Lyn Ngian, Albert Ho, Dr Samy Azer, Deniz Yaka, John Ciciulla and Pavani Sathasivan.

S E M I N A R

27 July 2001

ETHICS OF INTERNATIONAL RESEARCH AND CLINICAL PRACTICE

CONVENER

Professor Graham Brown

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S P E A K E R S

A Defence of Chinese Eugenics Legislation

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The Case Against Chinese Eugenics Legislation

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DNA Data Banks—Iceland and Tonga

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Culture, Medicine and Public Policy

PROFESSOR TONY COADY
Deputy Director and Head of the University of Melbourne
division of the ARC Special Research Centre in
Applied Philosophy and Public Policy

A Medical Student's Experience in Rural Zimbabwe

DR ED GILES
Intern, Royal Melbourne Hospital

Ethical Complexities of Testing for HIV in Africa

DR JAMES BEESON
Research Fellow, Department of Medicine, Royal Melbourne
Hospital, The University of Melbourne

Medical Research Ethics in 'North-South' Collaborations

MS BEBE LOFF
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GRAHAM BROWN

Introduction

GRAHAM BROWN

MANY MEMBERS OF our faculty are involved in international research where they not only face many of the same ethical issues we face in Australia, but also need to consider issues relevant to different cultural, economic and socio-political environments.

In the past fifty years, since the criminal cases which arose from abusive clinical research on prisoners in Germany, well-established guidelines for researchers have been developed. *The Nuremberg Code* highlighted the need for voluntary consent to participation and protection for the subject from any harm. Other landmarks include the 1964 *World Medical Association Declaration of Helsinki*, which includes many of the principles that have guided ethics committees in the last thirty years, and the *United Nations Universal Declaration of Human Rights*. In the early 1990s international guidelines for biomedical research involving humans were produced jointly by the World Health Organisation and the Council for International Organisations for Science. In Australia we are bound by the guidelines of the National Health & Medical Research Council.

Although these guidelines are based on principles of global relevance, their interpretation by ethics committees in different societies may produce different, and sometimes rather controversial, practical outcomes. For example, preventing HIV transmission from mother to baby is a major priority, but it was believed that the full doses of treatment recommended in developed countries could not be afforded by poor countries. So a trial was established to determine if a reduced dose was as effective as a larger dose. Some international critics argued that this trial was unethical as no patient involved in a trial sponsored from the United States should be subjected to anything less than the standard of care available in the United States. Considering local conditions and priorities can lead to different opinions from ethics committees working in different cultural settings. There may be

universal principles, but it is uncertain that there is a 'universal standard of care'.

Inducement to participate in clinical research can take many forms and consent can be required at different levels. If a trial offers improved community access to medical services, this may compromise an individual's decision to make a free and informed decision about participation. In some countries, the principle of individual autonomy may not be as important as consent being given by a partner or a community leader. In such situations, ethics committees from different cultures may find it difficult to accept a form of consent that would be unacceptable in their own culture. Our country has fairly standard guidelines for participation by individuals, but we have inadequate guidelines for dealing with whole communities.

As well as participating in international health research, many of our faculty and students also practise medicine overseas and, once again, differences come into focus.

In planning this seminar, we felt it was important to examine research and clinical practice in different countries, where different outcomes may be produced although universal guidelines are being followed. We hope to stimulate discussion about the role of international researchers, sometimes complicated by the involvement of researchers who stand to gain financially, and to consider the practical issues of undertaking research or a student medical elective in a developing country.

Another goal is to highlight that, for ethics committees whose task is to assess projects in Australia, the same issues apply here. Our multicultural population encompasses a wide spectrum of cultural and social views that must be considered in local research. □

A Defence of Chinese Eugenics Legislation

JULIAN SAVULESCU



JULIAN SAVULESCU

THE MATERNAL AND INFANT healthcare law, the so-called Chinese eugenics law, was introduced into China in 1995. Article 10 of the law requires couples wanting to marry to have a compulsory pre-marital check up. If the couple is diagnosed as having a genetic disease of a serious nature, they have to agree to either long-term contraception or sterilisation. Article 16 says that if a married couple suffers from a serious genetic disease, then the physician will give medical advice and the couple will follow it. That medical advice might include a requirement for pre-natal testing, followed by termination of pregnancy.

Although there are questions about whether these requirements are actually voluntary, I am assuming they are compulsory for the sake of argument because I think there are some justifications for the sorts of things the Chinese may have intended to do.

This law created great moral outrage in the west. The European Society of Human Genetics and the European Alliance of Human Genetics Support Groups urged the People's Republic of China to change the law so as to avoid compulsory childlessness on genetic grounds, and criticised Article 10 of

the law as 'an abuse of genetic information and an abuse of human rights'.

The Human Genome Organisation Ethics Committee said that Articles 9, 10 and 16 did not protect the Chinese people's basic human rights and failed to uphold human dignity and integrity. The British, Dutch and Argentinian genetics societies chose to boycott the Eighteenth International Congress on Genetics in Beijing in protest.

Even more extreme claims were made. One writer to the *Lancet* said:

Everything that we rightly condemned in Nazi Germany which involved ethnic cleansing and the elimination of life that was regarded as substandard by the Nazi regime seems now at least to find some partial acceptance with respect to China. We have duties as members of the medical profession to show our total opposition to such murderous procedures.

The reference to Nazi Germany raises the spectre of eugenics. From the late nineteenth century until the middle of last century the eugenics movement in Europe and North America aimed to enhance the quality of the genetic pool by encouraging those it judged to have a fit genetic status to reproduce, and by discouraging those it judged genetically unfit from reproducing, sometimes by employing involuntary sterilisation. The main aim of this movement was to eradicate psychiatric disease, mental retardation and criminality, which was thought to be genetic.

The first sterilisation law in the United States was passed in 1907 and over the next ten years fifteen more states introduced sterilisation laws which gave various powers to sterilise criminals, people guilty of rape and other crimes thought to be genetic in origin.

What was wrong with the eugenics movement? It rode roughshod over human rights. Indeed, it is out of concern for human rights that the principle of respect for procreative autonomy arises: couples should be free to decide when and how to procreate, and what kind of children to have. I have been a vigorous proponent of this in the areas of sex selection, cloning and access to assisted reproduction for gay and single women. It is the foundation stone of the modern approach to genetic counselling, which urges that genetic counsellors take a non-directive approach.

In certain circumstances it can be right to interfere in someone's free reproductive choice in order to promote some state of affairs.

However, even though we have a principle of respect for procreative autonomy, we also accept certain infringements on individual liberty, even in Australia. We accept the public interest principle that, in certain circumstances, it is right for some person or state to interfere in another person's free choice, in order to promote a particular state of affairs. There are numerous examples of this: we report infectious diseases, we contain people who have been in contact with highly infectious diseases such as ebola virus or lassa fever, and we require labelling on cigarettes and alcohol to warn of their dangers, particularly to pregnant women.

We should also accept a version of this principle in relation to reproductive choice. In certain circumstances it can be right to interfere in someone's free reproductive choice in order to promote some state of affairs. China's one child policy is an obvious example, but what about countries like Australia?

Based on the American decision from *Rowe vs Wade*—that the state has an interest in protecting life from the time of viability in pregnancy—women in England, Australia and the United States have been forced to have caesarian sections in the interests of their unborn child. We compulsorily require a series of genetic counselling sessions prior to having genetic testing for various genetic disorders, such as Huntington's disease. We have laws in some parts of the world—the western world—against consanguineous marriages. We require sperm donors to be identified, we require syphilis, and in some places AIDS, testing regardless of whether women want it or not, and we fortify our cereals with folic acid to prevent children being born with spina bifida, regardless of whether people want additional folic acid. I think all these interventions are justifiable because they are based on considerations of human well-being.

We also interfere in reproduction in areas that I think are much darker and less easily justified. We have legislation in Australia banning sex selection using pre-implantation genetic diagnosis. Until recently we had legislation in Victoria banning homosexual and single women from accessing assisted reproductive technologies. We have legislation banning reproduction by cloning and we have legislation which bans embryo splitting. These interventions are based not on considerations of preventing harm but of preventing offence to the morals of a certain group in the community—on public interest as moral disapproval.

As the Hart/Devlin debate in the 1950s showed, this is very shaky ground on which to legislate. Hart objected to laws that made homosexuality a crime and argued that as private behaviour harmed no-one else it was inappropriate for legislation to regulate that behaviour. Yet that is precisely the way we approach reproduction in Victoria. Indeed the practice in Australia and the law in the United Kingdom enforce much the same sort of thing as China is attempting. In the United Kingdom, after twenty-four weeks of pregnancy you can only have a termination of pregnancy if your foetus has a substantial risk of serious handicap, not if the foetus has a more minor or moderate degree of handicap. This is a form of passive eugenics: it has the same effect as active eugenics, or forcing people to have terminations for foetal disability.

So, we do interfere in reproduction in the west, and in Australia in particular. What should constitute legitimate grounds for interference in reproduction? Cyprus gives us a good indication. Fifteen years ago Cyprus introduced genetic screening for thalassemia via the church. All marriages in Cyprus must be authorised by the church, which has introduced the principle that couples must have thalassemia carrier testing in order to receive a marriage certificate. Although there is no obligation to do so, 95-98 per cent do go on to have pre-natal testing and terminate pregnancies of foetuses with thalassemia. Fifty per cent of the blood supply and twenty per cent of the drug budget in Cyprus goes to treating thalassemia, an inherited blood disorder. If Cyprus had not introduced genetic screening fifteen years ago, it would have had two and a half times as many people today suffering from thalassemia: the country would be bankrupt if it attempted to treat that many people.

I think most people would accept that coercive intervention, requiring people to have genetic testing in order to become married, is a reasonable thing to do. What is the difference between Cyprus and China? Cyprus requires testing but not termination of pregnancy, whereas China, at least on one reading of the law, requires a more extensive invasion of liberty including contraception, forced childlessness and forced termination of pregnancy.

I think Article 10 of the Chinese Maternal and Infant Healthcare Law is the most controversial: it forces childlessness on people if they are judged to be at risk of passing on a genetic disorder, and this is problematic. But the Cyprus example shows

that there can be legitimate coercion where significant health problems face the community. Such intervention can be an effective way of promoting the public interest and there is no alternative as effective and less restrictive. Certainly China faces a massive public health problem. Thirty million people with genetic disorders who can't adequately be cared for is a significant public health problem.

Ethical principles are not relative. The same public interest principle that operates in China operates in Australia, but its application is different. We do not need forced genetic testing or forced termination of pregnancy because we do not have the same problems as China. China's law is based on considerations of human well-being, which I think are the only legitimate public interest grounds for interference in reproduction. Australia interferes in reproduction in the public interest but some of that interference is not based on considerations of well-being, but on grounds of offence to morals—on the grounds that lesbians are somehow unfit to parent. I believe this is not as legitimate or defensible as the Chinese legislation based on considerations of well-being.

So what do I think of the Chinese eugenics law and the moral outrage that occurred in response to it? I have returned to my extensive religious education during secondary school to look for an appropriate quote, and I found it in the *Book of Mark*:

Jesus spoke a parable to them: Can the blind guide the blind? Won't they both fall into a pit? How can you tell your brother, Brother let me remove the speck of chaff that is in your eye, when you yourself don't see the beam that is in your own eye. You hypocrite. First remove the beam from your own eye and then you will see clearly to remove the speck of chaff that is in your brother's eye. □

Julian Savulescu takes up the Uehir Chair in Applied Ethics at Oxford University in July 2002

The Case Against Chinese Eugenics Legislation

AGNES BANKIER



AGNES BANKIER

THE CHINESE MATERNAL AND Infant Healthcare Law of 1995 advocated compulsory pre-marital genetic evaluation. The consequence of this was that marriage for couples at known risk was conditional on agreed sterilisation or contraception or prenatal diagnosis and termination of pregnancy of an affected foetus. Such a prescriptive law is against the basic human right of reproductive autonomy.

It is accepted that choice is not unlimited. Choice may be limited either by the individual or by society. Individuals may choose to limit their

range of choices because of their circumstances, their attitudes and moral framework or because of the consequences of their choice on family members. In society there is the tension between the right of the individual and community benefit. This may be as simple as fair allocation of a community's available resources so that the rights of one person don't override the rights of others. In reproductive choice the consequences are potentially broader than simply the costs of the tests or the care of the persons born.

The developments of the human genome project have provided tests for an increasing number of genetic disorders. As we understand the genetic influences on susceptibility and even on behaviour, the potential is there to provide genetic testing not only to enhance health but also to enhance physical or behavioural characteristics. Whilst the community is supportive in providing tests which give people the choice of avoiding serious genetic disorders, the potential consequences of genetic enhancement are far reaching and could have a major impact on how we view and value humanity. The degree to which society is willing to support reproductive choice for any child that people wish to have has not yet been debated.

The reality is that this legislation would have had little effect on eliminating birth defects.

When the Chinese Maternal and Infant Healthcare Law was promulgated there was an outcry in western society. China did not appreciate the reasons for western concerns. The concept of personal choice is not part of the Chinese political culture, where community good is upheld above the value of the individual. It is a very large population and there are no special medical services for people with disabilities, no carers' benefits, no pensions. A child born into a family becomes the responsibility of that family. In a country where the government is encouraging a 'one child policy', that child grows up to have the responsibility of caring for ageing parents, a responsibility that a child with a disability could not fulfil.

In this setting it is not an unconstrained choice to continue a pregnancy of a foetus with known disabilities. If there is a known abnormality or birth defect detected in the pregnancy, a couple can truly make a choice only if both alternatives—continuing or terminating the pregnancy—are equally supported. In the Chinese context there would not be support for continuing the pregnancy. Given that choice, most couples in such circumstances would choose to terminate the pregnancy.

The reality is that this legislation would have had little effect on eliminating birth defects. Most birth defects are not inherited. Many chromosome abnormalities may not have a family history of birth defects and may not be anticipated. To be identifiable in pregnancy the birth defect would need to be dominantly inherited or of X-linked inheritance, with a family history of problems. In fact, many genetic conditions are recessively inherited, with no abnormalities being detected in carriers through the family. It follows that the broad Maternal and Infant Healthcare Law is not justifiable on the basis of the 'greater good' for the community.

In the west we believe that ethical principles are universal and are based on the will to do good and not harm with respect for autonomy. The Chinese government was encouraged to include the notion of choice in its legislation.

...it has been our experience that consumers empowered by knowledge make 'good' choices.

The Eighteenth International Congress of Genetics, held in Beijing in August 1998, hosted a workshop of science and ethics of eugenics. The workshop's conclusion advocated that new technology should be used to provide individuals with reliable information on which to base personal reproductive choices, not as a tool of public policy or coercion. It was further stated that informed choice should be the basis for all genetic counselling and advice on reproductive decisions, and that genetic counselling should be for the benefit of the couple and their family. It was also felt that geneticists should have the

responsibility to educate physicians, decision-makers and the general public about genetics and its consequences for health. These conclusions were published in *Nature* Vol. 394/20 in August 1998.

Genetic Health Services Victoria, like other western services, believes in promoting choice through diagnosis, counselling, support, education and research. Choices in genetic health are life-defining and permanent and need to be made with accurate information and support to be truly 'informed choice'. Ensuring informed choice involves providing information to individuals or couples and clarifying options, providing the opportunity for discussion to ensure that the information is understood, and providing time for reflection and consideration of personally acceptable alternatives before a choice is made. In the context of support it has been our experience that consumers empowered by knowledge make 'good' choices. When financial resources are limited, we believe that given an educated public debate good choices can be made in a balanced way.

In considering the effects of disability one must also weigh up what would happen to the community if disability were eliminated and we lost our genetic diversity. It would have been tragic had there been gene testing for manic depressive illness a century ago—we would have lost much of the creative talent in the arts from our society.

Our experience of prenatal diagnosis has shown that most parents choose to have healthy children. Voluntary carrier testing in communities has also shown that people who share the same vision and belief may self-limit the choice of their partner in order to avoid the risks associated with having a child with a disability, or they may choose to have prenatal diagnosis. This has been shown in Mediterranean communities at risk of thalassaemia and in Jewish communities at risk of Tay Sachs disease. As genetic testing becomes available there will be a need for debate about how such tests are utilised.

Legislation alone does not create moral conduct. Personal and professional deliberations as well as community debate are an integral part of establishing society's moral viewpoint. We must now carefully consider the ethical issues and consequences which surround genetic testing, for the sake of future generations. □

DNA Data Banks—Iceland and Tonga

LOANE SKENE



LOANE SKENE

HERE ARE MANY reasons to undertake genetic research on small isolated communities that have had stable, multi-ethnic populations over many generations. In particular, one may find correlations between particular genes and the onset of disease. New drugs and drugs specific to people with particular genetic constitutions can then be developed.

Two projects of this type are being conducted: by DeCode in Iceland and by Autogen in Tonga.

The Iceland Project (DeCode)

The Iceland project was established under a statute approved by the Icelandic parliament on 17 December 1998. Its duration is twelve years and there are two stages in the research. First, information is being obtained from anonymised patient records from the whole population of the country, using the resources of the public health system. This part of the research is compulsory unless people opt out. The information is stored in a secure computer

system for clinical and statistical analysis. In the second stage of the project, the information is cross-referenced with DeCode's genealogical database, so that genotypic data can be examined to identify family connections with particular medical conditions. This part of the research is done only after donors have given their informed consent.

The Tonga Project (Autogen)

The Tonga project is different in several respects. It is non-statutory and of only five years duration. The patients are identified, having been located by the Ministry of Health as members of families with a high incidence of disease, and specifically approached for consent. Blood is then taken from family members with their informed consent. The whole population is not involved in the project—only particular, affected families.

Ethical Concerns

Exploitation

When research is conducted on a small population in a 'primitive' country, there is always sensitivity about the risk of exploitation. Are these people being used as guinea pigs in research that will provide more benefits to the developed world than to the participants and their country? Conditions like coronary artery diseases and diabetes are widespread in the developed world and drug companies may make huge profits if successful treatments can be found.

Competent adults should be entitled to decide for themselves whether or not to participate in a research project.

Benefits

This concern can be met if the research has real benefits for the trial participants and their country, as well as for others. In the Tonga project, for example, the local people will get a new database to help their own health care, new facilities, job opportunities, free access to new drugs developed from the project, and a share of royalties from those drugs.

Risks

These benefits must, of course, be balanced against potential risks. Genetic knowledge is sometimes unwelcome or confusing. It may lead to family disruption, stigmatisation or discrimination. People who know that they are at risk of a genetic condition may become the 'worried well' even if they have no symptoms.

Autonomy

Perhaps the predominant ethical value is autonomy. Competent adults should be entitled to decide for themselves whether or not to participate in a research project. Denying them an opportunity to decide because they do not have the sophistication of western people may seem paternalistic. The decision should be left to them, provided they are properly informed about what will be required of them and the possible implications. Ethical evaluations should therefore focus on the plain language statement explaining the proposed research and the consent form to ensure that they are readily comprehensible, that there is a mechanism for answering questions, and that participation is voluntary etc.

Confidentiality

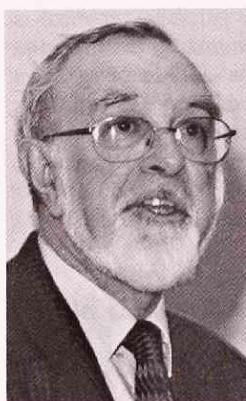
To protect people's privacy and avoid misuse of information obtained in research, all personal information must be securely stored with appropriate arrangements for its disposal at the end of the project.

Ethics Approval

Finally, there should be external, independent review of proposed research with objective criteria for ethical evaluation of proposals. □

Culture, Medicine and Public Policy

TONY COADY



TONY COADY

THE CULTURAL BACKGROUND of patients is a very important consideration in determining approaches to illness, but we need to treat the idea of culture with some care. In much contemporary life, the word 'culture' has assumed an almost mantra-like status that can cause serious confusion and there is a need for sharper focus in discussions that invoke it. I won't try to define culture but will take it that it has something to do with the meanings that a group tends to give to certain actions and behaviours and the norms, implicit or explicit, that membership in a group tends to enforce.

Some reference to what is conveyed by the word 'culture' is important. We cannot understand people in isolation from their backgrounds, including communal backgrounds. This point about understanding is vital in medicine. One persistent difficulty in dealing professionally with people is the tendency to treat them as mere problems. They have problems and you are equipped to some degree to deal with the problems, but the problems will be misunderstood if isolated from the people who have them. Other facts about the people are relevant to understanding the problems and to dealing sensitively with them. Such facts are not restricted to their ethnic or cultural background. Issues such as personal history, temperament, other illnesses and spiritual outlook are also significant. So it is important for understanding an individual that you know as much as is feasible about the beliefs and values they are likely to have as a result of their involvement with their various communities of attachment. I say 'various communities' because it is a mistake to think that only one such attachment is possible. So culture is one of the important things to take into account in understanding patients and, more generally, populations with health problems.

. . .the hard fought and almost won battle to give due weight to patient autonomy is coming under fire.

One problem with culture is: who has the right to speak about what the culture demands? Who is authoritative about the nature of the cultural norms, pressures and expectations? This is closely connected with the fact that cultures are never as solidified, monolithic and unchangeable as popular discourse suggests. A culture always contains contested interpretations of itself and power plays for the determinative role in speaking for it. As a Catholic, it often annoys me to read in the press of 'the Catholic view' on various contentious matters, such as abortion or infertility treatment or safe injecting houses. On most of these issues there are many considered outlooks that can reasonably lay claim to be considered a 'Catholic view'. It is not surprising that views of the hierarchy are given considerable weight, but it is unfortunate if they are emphasised to the exclusion of competing positions. We need to be aware that the same thing is true of other religious communities and cultural groups. Many of us are only now becoming alert to the degree of dissent, conflict

and contention that exists (and has existed for some time) in the Aboriginal community. Acknowledgment of such complexity is not a negative comment on their lives, but an admission of a universal fact about groups of any sort.

But understanding people and 'where they are coming from' is not the end of the matter. You have to advise and help them with their illnesses and problems. There has been a tendency in much public discussion of cultural difference to deplore the prevailing individualism of our society (or of 'the dominant culture'). Transferred to the medical scene this means that the hard fought and almost won battle to give due weight to patient autonomy is coming under fire. Confidentiality is also at risk. I was at a conference not long ago where a number of social workers were advocating that they should treat Aboriginal communities as their client and not the individuals who sought their assistance—autonomy and confidentiality were mere western values. This implied a breaching of confidential communications in ways that could have devastating effects upon individuals. Whatever the importance of group and cultural membership, it cannot be right to let the group decide for the patient unless the patient wants it to. The situation with children requires more subtle treatment, though even here, some presumption of autonomy is defensible.

This example illustrates a failure to comprehend not only the complexity of cultural groups and the power relations within them, but also a failure to understand the potential oppressiveness of groups, whether they be religious, ethnic, cultural or political. Communities can be supportive of personal growth and integral to personal identity. Our lives are wrongly understood if we are viewed as individuals disconnected from tradition and intimate contemporary relationships with others. But there is no point in being blinded by sentimentality about such connections. Families are clearly basic to the development and identity of individuals, but even families can be abusive, dominating, stunting and crippling. If this is true of families, it is even more likely to be true of wider group associations, though in different ways. Individuals need both the support of groups and protection from them.

People are able to reflect on and criticise their own cultures, and they are right to do so. Autonomy, personal dignity and the right to know what your medical treatment is all about are not 'western' values (whatever this means), but basic human values and entitlements. There are ways in which groups and cultures influence the values that people have, and the way they view the world. This is one reason why we need to understand cultural backgrounds. Nonetheless, individuals are not cemented to these values or pictures merely because they are endorsed in some way by their culture or by elements in it. In addition to culture, they can draw upon experience, reason and imagination. They can see what other cultures have to offer and can accept or reject what is on display. People in different cultures can learn from other cultures and can change and adapt as seems sensible. People are not chained to their cultures, otherwise white Australians couldn't learn better ways of respecting the land from Aboriginal culture and Christians couldn't learn the important lessons that Buddhism or Confucianism have to teach us. Such transactions are inevitably two-way, and attempts to isolate and freeze cultures are not only doomed but mistaken in principle.

An amusing example of the absurdities into which cultural relativist thinking so readily leads us was provided by a report in *The Australian* for 30/31 July, 1994. This concerned a twenty-one-year-old Sydney man who got into a drunken brawl in the English city of York and had assault charges against him dropped when the court was told of the 'cultural differences' between Australia and Britain. The man, Jason Dawe, was put on a bond of \$500 for one year because the magistrate accepted his defence lawyer's claim that the violent behaviour was perfectly normal in Sydney.

Dawe had a 'Sydney-style' night out in York during which he laid out three men before being severely beaten up himself and landing in hospital. His counsel, claiming that such behaviour was standard Saturday night behaviour in Sydney, pointed out that Dawe had come off very much second-best and didn't want to take the matter further. The prosecutor said that he would not proceed with the charges, even though they were serious, and the bench (Mr Harry Windle) said: 'We appreciate the difference in culture between our two countries. But here we take a very dim view of fighting in the street.' One is inclined to think: Poor old Poms, diddled again! But it seems to me that a lot of the blind deference to cultural practices that is sometimes advocated in Australia commits the same folly. □

A Medical Student's Experience in Rural Zimbabwe

ED GILES



ED GILES

EVERY YEAR LARGE numbers of medical students from this university—and around the world—spend their electives in a third world setting. At the end of 1999, I spent six weeks in a government hospital in Rusape, a small town in the highlands of north-eastern Zimbabwe. I met the three doctors who worked in the 280-bed hospital, and after one day of orientation I was expected to start work. My responsibilities included the male medical ward, the paediatric ward, minor procedures and general outpatient work—seeing between sixty to a hundred patients per day. It took about three weeks of arguing with nurses, patients and others before I gave up and accepted that I was to be called 'Doctor'.

My most difficult experiences were when patients died.

Over the last couple of years stories of violence and political upheaval in Zimbabwe have been much in the news. One of the recent changes before my arrival was the removal of a free healthcare system, which meant that patients had to pay a considerable portion of their salary just to see me—a medical student—in the outpatient clinic. On more than one occasion I saw patients who needed investigations, treatment or perhaps admission, which they refused because of the cost. A classic example of this was a patient with the history and examination features of tuberculosis, but who could not afford a chest x-ray. Interestingly, despite the poor availability of many medications in Zimbabwe, there was a special scheme to offer free TB treatment. My dilemma was that the cost of one chest x-ray was not significant for me. Should I pay for his investigation? And for others? Or should I start a patient on six months of multiple antibiotic therapy without a confirmed diagnosis (staining for acid-fast bacilli was unavailable)?

My most difficult experiences were when patients died. I will always remember a six-year-old boy with a respiratory infection, whom I saw with a senior nurse in the emergency department one evening. He didn't appear to be too unwell and the Zimbabwe protocol for this was to use penicillin, which the nurse agreed with. On my ward round the next day I discovered that this child had died in the night. Did I manage him

incorrectly? Would broader antibiotic cover have been useful? There was really no-one with whom I could discuss the situation—the backgrounds of the other doctors were too different from my own for them to understand how I felt. I had and still have many questions to which I will never know the answers.

On a different note, a common dilemma for medical students and clinical schools is the issue of HIV post-exposure prophylaxis for needle stick injuries. I chose to pay about \$100 and take with me a week's supply of triple therapy. There were many patients who required these drugs long term, and it would have been a drop in the ocean to give them away to anyone. What about a pregnant woman with known HIV? Or a work colleague who might sustain a needle stick injury?

There are clearly many important ethical issues for medical students visiting third world countries. These include the personal dilemmas that each individual will deal with differently, but also issues for the clinical schools and universities. Is it appropriate for students to be going into these situations at all? Many would argue that such a short exposure to this kind of medicine at a junior level is useless, or even harmful (from a psychological perspective) to the student.

Clearly, I had many valuable experiences in Rusape and probably, on balance, it was a positive experience. But what about the hospital? These small, hopelessly under-resourced hospitals take on students from around the world without any facilities to cope with them. And while the students may bring some assistance—occasionally even tangible assistance in the form of drugs or other supplies—this is transient and it can be difficult for institutions to cope with such short-term support.

How can the system be improved if students are to go on such electives? Many hospitals already provide their students with valuable information sessions, but while these often cover many of the significant medical issues, I'm not sure that the students are adequately prepared for the responsibilities they may face. Perhaps with more organisation between institutions, more formal arrangements could be made to establish ongoing contact between hospitals, and mutual benefits could be obtained through both education for the students and more concrete assistance for desperately deprived hospitals. □

Ethical Complexities of Testing for HIV in Africa

JAMES BEESON



JAMES BEESON

AN IMPORTANT FOCUS of medical research concerns the pressing health needs of developing countries. Beyond the scientific challenges in research studies, we are increasingly faced with complex challenges of how best to balance ethical principles with the practical realities of working in resource-poor settings. The problem of HIV testing and treatment, particularly among pregnant women, highlights many of the dilemmas faced due to the gross inequities in standards of health care between developed and developing countries.

Over the past fifteen to twenty years HIV/AIDS has spread extensively throughout most regions of the globe and is now believed to be the world's leading cause of death and disease.

In several African countries as many as one in four adults are infected, and the prevalence of HIV in Asia, where much of the world's population lives, is increasing. In Australia and most developed countries antiviral therapy has been available for many years and aggressive combination therapy is the standard approach. In developing countries the extremely high cost of HIV medications precludes their use and the infrastructure and services needed to provide patient treatment and monitoring are often lacking. Sadly, the harsh reality for most people living with HIV is that there is presently no specific treatment available.

Fundamental principles dictate that all people should have access to the same standard of health care. . .

Implications of HIV for Research

Research studies in developing countries often need to consider the effect of HIV because of its profound impact on the mortality and morbidity of populations. HIV increases susceptibility to many infections, such as tuberculosis and pneumonia, and substantially affects the growth and development of the foetus and of young children. We are increasingly having to make decisions about when and who to test for HIV and whether to provide HIV treatment if it is not normally provided by local health services, which is typically the case.

If HIV therapy is provided to HIV positive individuals involved in research studies it is inappropriate to stop providing it at the completion of the research program, but ensuring the sustainability of treatment and monitoring is an enormous challenge. Furthermore, by providing treatment to some individuals we create inequity in the health care available between those enrolled in studies and those in the wider community. Other difficulties include whether to extend treatment to partners, to other members of the community, or to HIV positive staff who are treating study participants—ideal but practically difficult within the constraints of a research project. HIV treatment costs thousands of dollars per person per year, has substantial toxicity associated with its use, and is not curative. With the added cost of essential monitoring, HIV therapy is currently unaffordable for most countries, particularly many African countries where the annual health budget is often less than \$20 per person per year. It is argued by many that the enormous funds required for HIV therapy could be used more effectively on preventive interventions to stop the spread of HIV and other infections, or on broader public health programs. Fundamental principles dictate that all people should have access to the same standard of health care, but until this becomes a reality we will continue to be faced with many challenging ethical dilemmas surrounding this issue.

If we are unable to provide the necessary level of support and care we might question whether testing should be done at all.

Testing for HIV

Accepted principles for screening tests such as HIV screening are that testing should be available to the whole population and that effective treatment should be available to all who test positive. Clearly, this is not the case in Africa.

Importantly, testing must also be acceptable to individuals, but various reports suggest the acceptance of HIV testing may be quite low in some settings or groups. In African women testing positive for HIV has been associated with domestic violence, marital breakdown and social isolation. These are important issues to consider and testing should not be performed without support services and counselling, or anticipating the potential social consequences of testing. If we are unable to provide the necessary level of support and care we might question whether testing should be done at all. In doing so, however, we also need to consider other significant benefits, to the community and to individuals, that might arise from the knowledge of being infected. Such benefits may include limiting the spread of infection, increasing awareness and understanding of the disease, and improving management of other infections that influence or are influenced by HIV infection.

Testing and Treating Pregnant Women

In pregnancy there is the additional issue of preventing mother to child transmission of HIV. Transmission can occur before or during delivery, or through breastfeeding. In developed countries, antiviral therapy during pregnancy, delivery and for the newborn post-delivery, combined with formula feeding and caesarian section, can be highly effective in preventing transmission. As for HIV treatment in general, these interventions are not available in many developing countries, and breastfeeding is still often preferred in HIV-positive mothers because the risk of infant death from diarrhoea and malnutrition associated with bottle-feeding can be much higher. However, single dose or short course HIV therapy, for as little as \$20-\$50, can reduce maternal transmission and may be an affordable alternative in resource-poor settings. This sort of intervention does not treat the mother's infection and raises the issue of whether it is appropriate to treat baby but not mother: child health and survival is much reduced among orphans.

Conclusion

These issues pose great challenges to international research, which must always act in the individual's and the community's best interests, with their consent and preferably with their active involvement in planning and implementing research programs. Despite the difficulties, there are important opportunities and responsibilities to reduce health inequities through medical research and to help those in greatest need. □

Medical Research Ethics in 'North-South' Collaborations

BEBE LOFF,* JIM BLACK* AND SOLOMON BENATAR⁺



BEBE LOFF

RESEARCH ETHICS FOCUSES upon the personal interactions between researcher and research subject and traditionally places high priority on confidentiality and respect for autonomy. Global inequities in health are not similarly addressed in ethical guidelines. However, when researchers sponsored by organisations in industrialised countries conduct research in resource poor countries, additional ethical issues arise and must be confronted. Many ethical dilemmas have been brought to the fore in recent years, notably by AIDS vaccine research.



Research in developing countries must be seen in the context of the enduring legacy of colonialism, which greatly facilitated the development of the 'North'. The story for colonised countries however, is one of exploitation and many would argue that this included scientific endeavour that benefited northern governments and commercial interests, but not local communities. Although most former colonies are now constitutionally independent, overwhelming economic dependence remains. This historical background and the present disparity in health status must be taken into account when formulating ethical principles for international collaborative research.

That such issues continue to arise is illustrated by ongoing research in Kenya, where it was observed that some sex workers in the slums of Nairobi did not contract HIV despite repeated exposure. On the basis of information gained from examining these women, researchers from the University of Nairobi and Oxford University produced a candidate vaccine which is currently undergoing trials in England and Kenya. The Medical Research Council of the United Kingdom filed a patent application in the names of researchers from Oxford University's Institute of Molecular Medicine. It was argued that the claim was made in their names because the novel technical content of the vaccine relied upon work done at Oxford, not on data obtained from studying the women and that any successful vaccine would be sold at prices most Africans could afford.¹

What are research partners from a resource poor setting entitled to expect?

Kenyan writers complained that this meant the British had seen Kenya's scientists as no more than laboratory assistants. They noted that Kenyans now had no property in the vaccine and would yet again have to rely on the charity of their northern partners.² The women themselves are unlikely to derive any benefit for their contribution.³

Ethical dilemmas surely arise here. How should this collaboration have been structured to promote greater equity and trust? What are research partners from a resource poor setting entitled to expect? What is owed to the broader community?

In an attempt to address some of these problems, recent guidelines and reports recommend that, at the very least, a successful product should be made available to trial participants.⁴ It has also been recommended that an agreement should be in place before research begins, providing a strategy for making the product or intervention more broadly available.⁵ Such agreements will require the commitment of many: multilateral agencies, multinational companies and governments amongst them. How these agreements might be monitored and enforced is less clear.



Researchers have argued that since it is difficult to foresee the long-term application of research findings, unnecessary obligations upon a research project may stall or terminate it, ultimately harming the people most in need. While this argument has some resonance it is less persuasive when examined in its historical and political context. Issues of access cannot be ignored in the face of widening disparities in health.

Further, the traditional individualistic approach of research ethics takes no account of a duty to contribute to capacity building in host communities, both in health service delivery and research. Examples provided in relatively new *World Health Organisation Operational Guidelines* include 'the enhancement of local health care, research, and the ability to respond to public needs'.⁵ Efforts to become engaged in capacity building in host communities should be meaningful, providing lasting benefit. Otherwise this would be an unfortunate replication of earlier unsuccessful colonial efforts where, following the departure of the colonial administrators, remaining institutions provided little of use. Capacity building requires both genuine community participation and integrating projects into the fabric of the local community. The principle of community participation is now also reflected in some ethical guidelines.⁶ Participation is not present when control remains with project sponsors and all that is offered is education or services. Community participation is, in many ways, a key to building capacity that is sustainable and not merely replicating a model operating in an industrialised country and which is likely to be short lived in a different cultural setting.

A comprehensive ethical framework for international health research must take account of the political dynamics that underpin the conduct of such research. Ethical research requires both the intellectual contributions of many disciplines and the conscious and practical commitment of all players. This will not be easy, but if the effort can result in enhanced global health, it will be worth it.□

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The authors acknowledge the contribution of Professor Stephen Cordner to this paper.

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FACULTY OF MEDICINE, DENTISTRY & HEALTH SCIENCES

DEAN'S LECTURE SERIES

SEMINAR

Cloning and Embryonic Stem Cell Research Does Australia Need a Moratorium?

Friday 26 July 2002, 2—5pm

Sunderland Lecture Theatre, ground floor,
medical building, University of Melbourne

Ethical concerns about stem cell therapy led to a moratorium on federally funded research in the USA and considerable debate in Australia. This seminar will explore the issues involved in cloning and embryonic stem cell research. Speakers and panellists will guide the audience through the many complex ethical issues considered by ethics committees in their decision making processes.

Convener

Professor Graham Brown, James Stewart Professor of Medicine and Head of Department of Medicine, Royal Melbourne Hospital, The University of Melbourne

Program

How can stem cells be used to treat disease?

Dr Perry Bartlett, Head, Development and Neurobiology, Walter and Eliza Hall Institute of Medical Research

A legal perspective on stem cell research and cloning

Professor Loane Skene

Professor and Associate Dean (Undergraduate)

Faculty of Law and Faculty of Medicine, Dentistry and Health Sciences, the University of Melbourne

A user's guide to ethical decision making

Dr Lynn Gillam

Lecturer in Health Ethics, Centre for the Study of Health and Society, The University of Melbourne

Questions, discussion and afternoon tea

Ethical and practical questions about the embryonic stem cell panacea

Very Reverend Professor Anthony Fisher

Director, John Paul II Institute for Marriage and Family

The therapeutic benefits—real or illusory?

Professor Jack Martin

Director, St Vincent's Institute of Medical Research

How do current laws limit embryonic stem cell research?

Professor Alan Trounson

Director, Institute of Reproduction and Development
Monash University

Audience discussion

GENETIC EPIDEMIOLOGY

Putting Genes and Environment into Perspective

15 May 2001

BY PROFESSOR JOHN HOPPER

NHMRC SENIOR PRINCIPAL RESEARCH FELLOW AND PROFESSORIAL FELLOW,
CENTRE FOR GENETIC EPIDEMIOLOGY, SCHOOL OF POPULATION HEALTH;
DIRECTOR, AUSTRALIAN TWIN REGISTRY

GE NETIC EPIDEMIOLOGY IS about genes and environment. The human genome project has opened up great possibilities for health and medicine—the challenge now is to work out how new genetic findings can be used to make a difference to the health of the population as a whole.

In his *Dictionary of Epidemiology* John Last defines 'epidemiology' as a science that deals with the aetiology, distribution, control and causes of disease in *populations*. Newton Morton defined 'genetic epidemiology' by taking that definition and inserting the words 'in relatives', and adding 'inherited causes of disease', being careful to point out that 'inherited' includes non-genetic inheritance. In this context, genetic epidemiology is a subset of epidemiology. The differences are that it makes one think not just in terms of individuals but in terms of sets of relatives (families), and adopt a broad view on why relatives should be similar—to consider more than just genes.

If you read the US-based journal *Genetic Epidemiology* you will see many articles about finding disease genes—but to me that isn't epidemiology, it's genetics. I think genetic epidemiology is more about characterising genes—working out what genes mean—and making population inference about the effects of both genes and environment. Most importantly, it has a role translating genetics into public health and clinical medicine.

Finding out where disease genes are, and what variants (or mutations) are involved, has traditionally been performed using genetic markers spaced randomly along the genome. The best resources for this sort of work are families with many cases of the disease that, by their very nature, are rare and atypical. Geneticists have often stopped short at this point. If you want to find out what gene variants really mean for the population, these are not the right families to study. It is, therefore, up to epidemiologists to step in with population-based samples of families to estimate penetrance (the risk of disease in people who have the genetic factor), prevalence (how many people in the population have the genetic risk), and what factors (such as family history or sub-types of disease in relatives) predict who these people are.

Except for discovering disease genes, the best and most informative designs are population-based families. I will return to this point.

The Australian Twin Registry

Twin studies have become a major tool for teasing apart the effects of nature and nurture. By studying their similarities—within both genetically identical (monozygous) and fraternal (dizygotic) pairs—twins can help us understand the importance of unmeasured genetic and environmental factors on disease susceptibility. By studying their differences—comparing one twin with the other who is either perfectly or half-matched for genetic factors—twins can help us study the effects of measured environmental factors. Due to their matching for age, sex and genetic factors, same-sex twin pairs can help in intervention studies, where one twin chosen at random is given a placebo and the other twin, what is hypothesised to be an active agent. There are also many other ways twins can help address important questions.

The Australian Twin Registry is a resource for scientific and medical research that has been running for over two decades, during which time more than 200 studies have been conducted, resulting in more than 500 publications. Both identical and non-identical twin pairs are on the registry, including opposite sex pairs. Twins come from across the country—we even keep in touch if they are overseas. Registration is purely voluntary and all we ask is that

they be prepared to consider requests to be in studies. The Australian Twin Registry is the largest volunteer twin registry in the world. Over 30 000 pairs have registered since 1978, but that is just over ten per cent of all twins in Australia.

Australian Twin and Family Studies

People usually think that twin and family studies just show how important genes are. On the contrary, we have found that by studying twins we can also get unique insights into the strength, timing and persistency of environmental effects. For example, in the early 1980s John Mathews (who established the



PROFESSOR JOHN HOPPER WITH A PAIR OF TWINS AT THE TWINS' PICNIC AT GOVERNMENT HOUSE IN MARCH 2001



TWINS' PICNIC, 25 MARCH 2001, GOVERNMENT HOUSE, VICTORIA

The Governor of Victoria, John Landy, kindly opened the grounds of Government House to host the first ever Australian 'Twins Day', run by the registry in collaboration with the Australian Multiple Births Association. This was a wonderful occasion. In the Year of the Volunteer, the registry thanked Australian twins for their contribution to medical science over the past two decades. Hundreds of twin pairs and triplets, as well as their families and loved ones, attended on a perfect Melbourne autumn day. All major local television stations gave excellent coverage in their Sunday night news, and there was a general consensus that this sort of event should be repeated. Some happy attendees are shown in the accompanying photographs.

twin registry) and I found that the correlation between blood lead levels in adult siblings living in Melbourne fell off dramatically the longer that the siblings lived apart. This suggested an effect of the environment shared during upbringing that dissipated with time when siblings left home. That is, although adult siblings are similar in blood lead levels, it is due to the environment rather than the possible existence of blood lead metabolism genes.

We also studied bone density in young girls and women, in collaboration with John Wark and Ego Seeman. Apart from confirming that genetic factors play a major role in explaining why bone density varies in women of the same age, we found an effect of shared environment that was at its peak during the ages sixteen to eighteen and then fell dramatically to disappear by age twenty-three. We know that at age eighteen almost all these twins were living together, and that by age twenty-three they almost all lived apart. This suggests that the childhood environmental effects on bone density shared by twins when they live together are quickly overwhelmed by differences in lifestyles the twins experience when they live apart, even in early adulthood.

On the other hand, consider breast density—the proportion of a woman's breast tissue composed of dense or non-fat material. Breast density is a strong risk factor for breast cancer, with a five-fold difference in risk between women with densities in the lower twenty per cent of the population distribution and those in the upper twenty per cent. We measured breast density in more than 700 twin pairs in Melbourne, Sydney and Perth and found a high correlation of 0.7 in monozygotic pairs, and about half that correlation in dizygotic pairs (who share on average half their genes). More importantly, colleagues in Canada repeated this study in North America and got virtually identical correlations. This replication across the two continents increases confidence in our findings, which suggest that genetic factors play a major role in why women differ in breast density—and hence in their risk of breast cancer. Finding these genes is our next goal.

A study of skin moles in teenagers was conducted in southeast Queensland by Nick Martin, who was a co-instigator of the Australian Twin Registry. When you think about moles, you think about sunlight, not about genes. But they found that the correlation was very high in monozygotic pairs, about 0.9, the same correlation typically found for height, and about half of

that in dizygotic pairs. So it appears that in the Queensland environment, variation in mole count is highly genetic—quite a shock to the epidemiologists at the time. The study was repeated by Tim Bishop and Julia Newton-Bishop in Leeds, UK. It was thought that perhaps the genetic variation was so evident because people from an English background had moved to Queensland—an environment saturated with sunlight. But while the UK study found that the average mole count was about twenty per cent less, fascinatingly, the variance and twin correlations were exactly the same. Therefore, this genetic component of variation is the same in white people in the United Kingdom as it is in white people in Australia. The environment (greater sun exposure) is simply increasing the average number of moles, but the genetic variation is maintained in these ethnically similar populations.

It is fascinating what you can find using twins to study genetic and environmental factors and it is not necessarily what you would have believed when the study started.

ECHIDNAS

That uniquely Australian monotreme, the echidna, is the symbol for our large collaborative studies: Epidemiology of Chronic diseases, Health Interventions and DNA Studies (ECHIDNAS). This work has been awarded a five year NHMRC Program Grant of more than \$8 million. The studies are built out of the Melbourne Collaborative Cohort Study (*Health 2000*), run from the recently re-named Cancer Council Victoria, by Graham Giles and colleagues, and the population-based cancer family studies (see below).

Health 2000 was established in the early 1990s, when more than 41 500 Melburnians, then aged forty to sixty-nine, were recruited. There was a special effort to recruit southern European migrants because they have lower cancer rates than those born in Australia, differences that appear to dissipate the longer they live in Australia, suggesting there is something about the local lifestyle that increases cancer risks. The particular emphasis of this study was originally diet, but it also addresses a range of other environmental as well as genetic risk factors. Blood samples were collected from these people back in 1992. A follow-up questionnaire was mailed to the cohort in 1995, and the cohort again will be re-measured face-to-face over the next five years. Studies of breast cancer, prostate cancer, bowel cancer, diabetes and cardiovascular disease are already underway using this large cohort of ageing Melburnians. This is a major local resource for research—only now are people starting to realise what has been developed over the last ten years and how important this cohort study is going to be.

We have also established several population-based case-control-family studies of bowel, breast, prostate and childhood cancers and melanoma. These studies involve thousands of families with and without a history of cancer.

The Australian Breast Cancer Family Study

The Australian Breast Cancer Family Study was also established about ten years ago through local funding. In 1995 it received new funding from the National Institute of Health in the USA, as part of the Cooperative Family Registry for Breast Cancer Studies which came about as a response to the discovery of BRCA1 and BRCA2. Women may be at a substantially increased risk of breast and ovarian cancer if they inherit just one faulty copy of either of these genes.

Cases living in Melbourne or Sydney are sampled through the Victorian and New South Wales cancer registries, and controls are selected using the government electoral rolls. We collect epidemiological data by questionnaire and take blood samples and try to obtain tissue samples from people who have had a cancer.

Australia is an excellent place to conduct these cancer family studies. We are an urbanised population and relatively stable compared, for example, to the United States. There's compulsory cancer registration so we can have population-based sampling of cases, and of controls via the electoral roll. We have a National Death Index and a National Cancer Statistics Clearing House, so we can passively follow up people with their permission and find out what happens to them. We have a small community of researchers and physicians who meet regularly to collaborate with each other. At the moment Australia has a fairly pragmatic attitude to ethical and privacy issues, which enables us to do this cutting edge research. This is not necessarily the situation in the United States and some other western countries. We have studied 3000 families, interviewed 12 000 individuals, and collected almost 6000 blood samples.

At the moment Australia has a fairly pragmatic attitude to ethical and privacy issues . . .

What have been the major findings of the study to date? Whatever we find seems to upset our previous views of the world. BRCA1 and BRCA2 were discovered using families with extraordinary histories of breast cancer. We searched for mutations in BRCA1 using DNA from forty-four women diagnosed with breast cancer before the age of forty, but who had no affected relatives, and found that two were mutation carriers. We then looked at the DNA from forty-seven such affected women who had at least one other affected relative and found only one mutation carrier, not more as anticipated. In this family the affected mutation-carrying woman's mother had breast cancer at the age of forty-eight, but the mother didn't carry the mutation! We then checked if her father did and there was a history of breast cancer on his side of the family but we could not find a mutation. When we looked more carefully at the genetic information we had, we realised that this man was not her biological father. Every step of the study was teaching us to think again.

We then looked for protein-truncating mutations in these two genes: faults that upset the coding of the gene and lead to shortened proteins being made. It is generally considered that these are 'deleterious' mutations. We found eighteen mutation carriers—half for BRCA1 and half for BRCA2—in a total of almost 400 women who had breast cancer before age forty. And only five of those eighteen had a family history of breast cancer.

Just one of these eighteen families looked like the sort of family in which the genes had been discovered. The first carrier we found was a woman who had breast cancer at age thirty-eight. Her mother had breast cancer at age sixty-two, and she too carried a copy of the mutation. Two other aunts on the mother's side had breast cancer but were deceased. We know that one must have been a carrier because both her children are carriers, and statistically the other affected aunt almost certainly was a carrier as well. This, however, is not a typical mutation-carrying family, in fact it is quite atypical. So, again, the population-based 'epidemiological' perspective turns around the geneticist's view based on studying only families with multiple-cases of the disease.



The typical mutation-carrying woman had no breast cancer in any of her sisters, mother, or aunts and grandmothers on both sides of the family, even though there is a probability that some at least carried the mutation. When we used this data to estimate the risk of breast cancer in mutation carriers we came up with a forty per cent lifetime risk, equivalent to about a ten-fold increased risk of breast cancer. However, geneticists had previously looked only at the extraordinary families that were used to find BRCA1 and BRCA2, and had found that the lifetime risk was eighty per cent, twice what we had found. It took us a long time to get our work published because every time we submitted it to a journal the reviewers kept saying that we had done something wrong. It now transpires that there are data from the UK and other countries that give findings consistent with ours.

So what is going on here? One possible explanation is that the risk is really a characteristic of the mutation. There might be different types of mutations (and we don't yet really know how to tease them apart); the worst ones tend to be in the families with multiple cases and the lower risk mutations are more common in population-based samples of women with breast cancer. Another intriguing possibility is that there are family-specific triggers. It's one thing for a woman to have inherited a mutation which makes her susceptible to breast cancer, but whether or not she goes on to get breast cancer may depend on other factors, genetic or environmental, that tend to be shared by members of the same family. A major task now is to identify what we call the modifiers of genetic risk. If successful this will have profound clinical implications for women found to carry a mutation.

For unaffected women we have shown that only those with an extreme family history have a high probability, close to one-half, of carrying a mutation. In fact, most hereditary breast cancer occurs in women without any family history at all. So we have turned around people's view about breast cancer genetics through our population-based perspective.

If you want to find the women most likely to carry genetic risk for breast cancer then look at families with multiple cases of breast cancer, especially if they have had early onset. Ovarian cancer in families is also a very strong indicator of carrying a mutation. Ashkenazi Jewish women have about ten times the probability of carrying a mutation—these are specific founder or ancestral mutations—and we have developed an algorithm for trying to measure how different family history characteristics predict which Ashkenazi Jewish women carry a mutation.

If it is known that an unaffected woman has a mutation, what can she do to lower her risk of breast cancer? One option is surgery: removal of the breasts and of the ovaries will substantially reduce the risk of breast cancer. One study suggests that having children increases risk in mutation carriers (whereas it reduces risk in general), and another suggests that

mutation carriers should avoid using oral contraceptives. Another suggests smoking is protective! There is the potential that radiation exposure could exacerbate risk in women who have a germline mutation in BRCA1 or BRCA2, but mammographic screening involves radiation. All this presents a very unattractive scenario for a woman found to have a mutation in terms of prevention or early detection.

Genetic Testing in the Population

How can we use genetics to make a difference to health, not just for people who can afford expensive surgery or interventions or genetic testing, but for the population as a whole? One way may be through screening programs designed to detect early stage disease that can be treated successfully, targeted to the most appropriate groups in the population. For example, through *BreastScreen* mammographic screening is available free-of-charge to women over the age of forty, but targeted more to women over the age of fifty because younger women have denser breasts that make it hard to pick up cancers. It took decades of randomised controlled trials and other studies to obtain sufficient evidence that this was a worthwhile population-wide activity. People who want to jump into population-wide genetic testing should stop and think about just how much work it has taken to justify a national mammographic screening program.

Let's apply the WHO principles for population-based screening, the ones used to assess mammographic screening, to genetic testing. The issue at hand must pose an important health problem and the national history of the disease must be well understood. Therefore, we need to know how common the genetic form of the disease is, how common genetically at-risk individuals are in the population, what their risk of disease and mortality is and, most importantly, what factors influence their risk and survival.

... it's no good telling people they're at genetic risk without the services to make a positive impact on their lives.

An essential feature of screening is that there must be a recognisable early stage. For example, mammograms can show aberrations that might be a breast cancer. In terms of genetic testing, finding a mutation is the 'early stage'. Treatment at the early stage should be more beneficial—what is the point in knowing you are at genetic risk if there is nothing you can do about it? So we need a proven early treatment. Outcome must also be considered, not just in terms of survival but also in terms of issues like quality of life, and in toto the outcome must be better than if the individual was not identified as being at genetic risk. There should be a suitable genetic test, meaning it must be accurate and have good sensitivity and specificity. Many issues also arise because genetic testing has implications for other family members. So the confidential collection and storage of the data, the issues around ethical, legal and social issues—the ELSI issues—have to be well thought through, as well as insurance issues. There should be adequate facilities—it's no good telling people they're at genetic risk without the services to make a positive impact on their lives. Genetic counselling is needed to help people understand their

diagnosis, and clinical follow-up and management, so a substantial infrastructure needs to be established if we are to conduct genetic testing on a population basis. Finally, the physical and psychological harm to those screened should be less than the benefit, and evidence of this is essential. It will take a lot of work to get the necessary data and to carefully consider the full implications before population-based genetic screening programs are established.

When it comes to BRCA1 and BRCA2 we have shown that these genes explain a small proportion of disease. It is not really clear what a woman can do if she finds she's at a high genetic risk of breast cancer, other than surgery. The genetic test is currently very expensive and current techniques may be missing up to thirty per cent of mutations.

The genetic test should be acceptable to the population so issues about privacy and confidentiality need to be worked through. At the moment there are few accredited genetic testing services in Australia and genetic counsellors are rare—and we don't yet have evidence that we're not doing harm. So in terms of translating BRCA1 and BRCA2 testing into the population, we have a long way to go.

In summary, translation into real clinical and public health benefit cannot occur without information provided by the epidemiological studies of the sort we have established. The whole population is our laboratory, not just a genetics laboratory, although that too is essential. We need large studies in order to provide precise information, they need to be properly designed, conducted and analysed and, of course, substantial funding is needed.

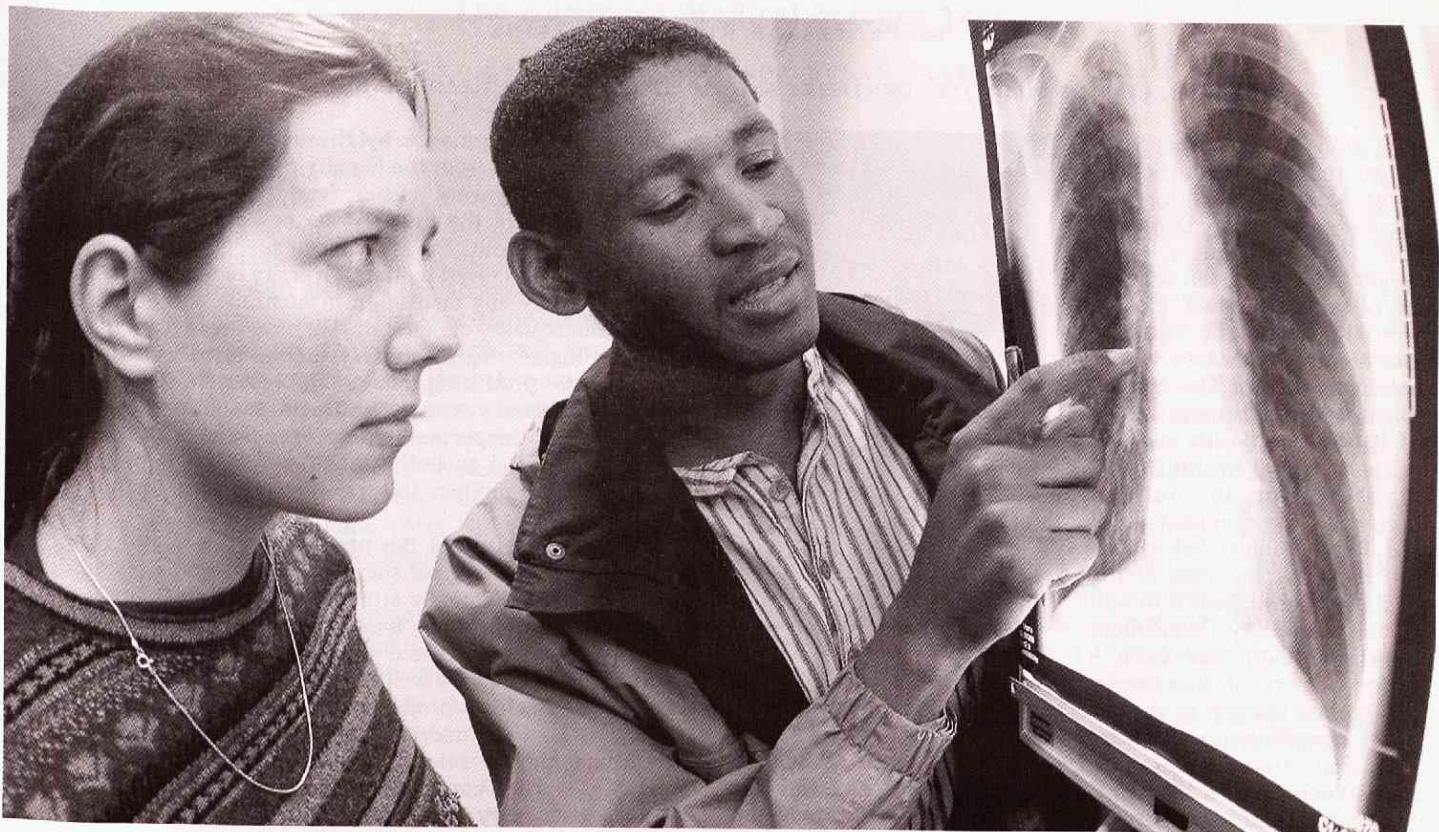
The three most important things in carrying out a scientific study are design, design and design.

The three most important things in carrying out a scientific study are design, design and design. If we don't get the design right we cannot guarantee the correct answer. In terms of translating results into clinical and public health benefit we need data from designed studies, not just expert opinions and exaggerated promises. Cost efficiency is critical for population-based genetic testing. It is no good saying we think this is going to be a good test without thinking out the costs—and costs involve more than just dollars. We must be careful not to inflict unnecessary damage on people by labeling them as being genetically at risk. We must also be careful not to raise false hopes. We should not offer a genetic test to people just because we have it.

The Human Genome Project certainly has great public health potential, but we need substantial knowledge and resources before any genetic screening program can be implemented in the population. There are many ethical, legal, social and practical issues which need resolving. The twin studies and the ECHIDNA studies we have established in Australia have given us a chance to address these issues for some of the common diseases of adulthood, and to play a major role in the translation of genetics into good public health.

I would like to thank my many collaborators and staff, only some of whom I have been able to mention, without whom these multidisciplinary, multicentre Australian studies could not have been established, run or turned into science.





THANK YOU FOR YOUR SUPPORT

THANK YOU TO all who have given financial support to the School of Medicine over the last year. This assistance is very much appreciated and has a significant impact on the success of some key initiatives. In 2001 alumni donated \$54 410 through UMMS membership and through the University Annual Appeal. Your donations are supporting the following priority teaching, student and research initiatives:

- **\$26967 supporting the development of clinical skills**

Equipment has been purchased for teaching early clinical skills on campus in the first three years of the medical course. This includes sphygmomanometers, simulated breasts and peak expiratory flow rate meters. Audiovisual instructional support material is also being developed. In addition, funds raised from alumni are contributing to a major initiative for the later years of the medical course, to equip clinical skills resource centres at the clinical sites. These resource centres, staffed by nurse educators and medical practitioners, will allow students to practise key clinical and procedural skills on manikins and fellow students. This initiative will complement and extend the current clinical skills program and will involve a broad range of clinicians from a variety of disciplines such as general practice, emergency medicine, anaesthetics, surgery and obstetrics and gynaecology. The skills will include core examination skills such as examination of the breast, rectum and vagina, and procedures such as venepuncture, insertion of intra-venous lines, suturing and wound care, ear syringing and lumbar puncture. Students will have the opportunity to learn these skills in a supervised, non-threatening environment and then improve their competence by real-life clinical practice.

- **\$9733 supporting important new research**

Research informs and influences our teaching and underpins advances in diagnosis and treatment. The faculty continues to maintain its lead in attracting national peer-

reviewed funding through the NHMRC but it is extremely difficult for emerging young researchers to obtain project grants. Donations will help some of our most promising young career researchers with crucial early support. This will allow them to gain a foothold so that they can develop their research for the future benefit of society.

- **\$11810 helping medical students in financial need**

Being in financial distress can threaten a student's ability to complete their medical course. Assistance for medical students in financial need is provided from these funds through the university's student financial aid office.

- **\$2300 for student prizes to encourage outstanding achievement**

The UMMS Bachelor of Medical Science Prize and the Peter G Jones Elective Essay Prize acknowledge outstanding student achievement in research and in professional and personal development during electives. These prizes offer students encouragement and recognition for achievements in their particular fields of interest.

- **\$3600 specified by donors**

To support museum, library and departmental needs.

Donations and benefactions help to ensure the high quality of the teaching, research and student programs in the school. The School of Medicine and the UMMS committee thank you for your generous support. We greatly value your continued interest and contributions.

If you would like more information about donations or bequests to the University of Melbourne, please contact Ms Robin Orams, telephone (+61 3) 8344 5888; email: robinjo@unimelb.edu.au; mail c/- UMMS Office, School of Medicine, The University of Melbourne, Victoria 3010, Australia. Alumni in the USA, Mexico and the UK, please see p43 in this issue of *Chiron*.

FROM THE DEAN

BY PROFESSOR RICHARD LARKINS

DEAN, FACULTY OF MEDICINE, DENTISTRY AND HEALTH SCIENCES, HEAD, SCHOOL OF MEDICINE

IT HAS BEEN another very exciting year for the School of Medicine and for the Faculty of Medicine, Dentistry and Health Sciences. The faculty now has seven schools all of which interact closely with the School of Medicine and contribute directly to the teaching program. This applies particularly to the new School of Population Health and the School of Rural Health (based in Shepparton in northern Victoria). The development of the Rural Clinical School, as the second component of the School of Rural Health to add to the University Department of Rural Health has been a major activity of the faculty and we are grateful to the Commonwealth Government for its major contribution to funding this exciting initiative and to the Victorian Government for some help with teaching infrastructure and student accommodation. As well as Shepparton, the Rural Clinical School will have major nodes in Wangaratta and Ballarat and students will also have placements in surrounding districts. The first ten students will start in July 2002 and when fully active from 2005, at least forty-eight students will spend most of their clinical training semesters in regional and rural centres with one or a maximum of two of the five semesters spent in Melbourne. Already, there are wonderful new facilities in the University Department of Rural Health in Shepparton and additional teaching facilities and accommodation are being built.



RICHARD LARKINS

Research performance by the faculty this year has been outstanding. Staff from the Faculty of Medicine, Dentistry and Health Sciences were either lead investigators or major partners in six of the first sixteen new-style Program Grants awarded by NHMRC for 2002 to 2006. The total amount of NHMRC funds received by the University of Melbourne is by far the greatest by any institution in Australia and attests to the outstanding quality of our staff. We have the highest number of research higher degree students in the history of the faculty and they are producing outstanding research. Of course, the affiliated medical research institutes are great assets to the university and the partnership between these institutes and the university is vital to both. The development of the Bio21 Project will strengthen this relationship even further in the future.

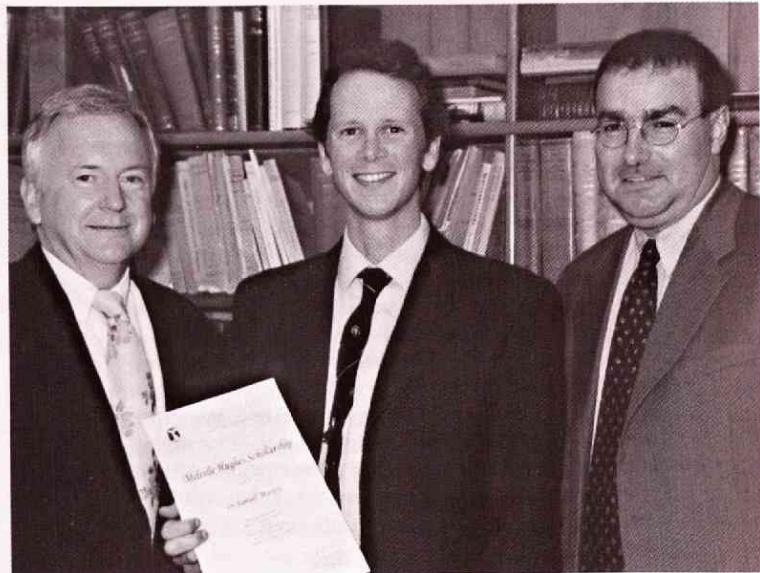
The introduction of the new curriculum in the School of Medicine has been a great success with the students finding the new course intellectually stimulating and personally fulfilling. They rate the problem-based learning very highly. The Advanced Medical Science year for the undergraduate entry students has been very well received with many of the students doing very exciting projects. Several have presented their findings at national and international meetings and some have already achieved scientific publications in peer-reviewed journals. The combination of the undergraduate and postgraduate entry streams has also worked well, the different entry streams and mechanisms contributing greatly to the diversity of the students in the course. A most important outcome of the new course is that students are maintaining very high levels of commitment, enthusiasm and idealism.

It is an enormous privilege to be Dean of a faculty comprising such committed and capable people. The outstanding achievements in both research and teaching in a time when the higher education sector has been under enormous pressure are a tribute to everyone involved.

2002 MELVILLE HUGHES SCHOLARSHIP

The 2002 Melville Hughes Scholarship has been presented to Dr Samuel Morley (MB BS 1996), who is undertaking his Doctor of Philosophy candidature under the supervision of Dr Perry Bartlett, in the Division of Neurobiology at the Walter and Eliza Hall Institute of Medical Research. This valuable scholarship was bequeathed to the university in honour of Florence Hughes and her brother Melville Rule Hughes (MB BS 1915) who was killed in action in France in 1916, and is offered to medical graduates undergoing further research training in the discipline of surgery.

Dr Morley's research is on the identification of molecules that regulate stroke. He is establishing various models of stroke and will use gene-screening techniques to identify key molecules involved in the stroke process. He then hopes to develop agonists or antagonists to these molecules and test their effect in animal models. The work aims to establish new modalities for neuroprotection in neurosurgery and the treatment of acute, non-surgical stroke.



L-R: DR PERRY BARTLETT, DR SAMUEL MORLEY AND MR MICHAEL MURPHY (CLINICAL SUPERVISOR, ST VINCENT'S HOSPITAL) AT THE PRESENTATION OF THE SCHOLARSHIP

THE DEVELOPING MB BS CURRICULUM

The Advanced Medical Science Year

BY ASSOCIATE PROFESSOR SUSAN ELLIOTT

A UNIQUE FEATURE of the new medical course at Melbourne is the intercalated research degree, the Bachelor of Medical Science (BMedSc), for all undergraduate entry students. This research degree was introduced as a requisite component of the medical course to equip our graduates with skills in the acquisition, evaluation and application of evidence. The final year of the BMedSc is the Advanced Medical Science (AMS) research year that allows students to explore, in greater depth than is possible in the body of the curriculum, an area relevant to medicine and to broaden their experience of health care by the opportunity to learn in off-campus settings. It also provides students with an opportunity to learn the theory behind evidence and research, and to experience it first hand. Also, by interacting with researchers, students will better appreciate their role in the advancement of medicine.

The faculty was eagerly awaiting the start of this unique component of the medial degree and the first cohort of students began their AMS year in July 2001. They chose their unit of study from the 113 AMS units available. These contained a total of 736 available student places (nearly four times the student

population) and all students were accepted into their first or second choice. The possibilities for research include basic laboratory research in any of the biological science disciplines, clinical research, and related social sciences including medical history, medical ethics, Koori health and adolescent health. The students can also choose from a wide range of locations for their study. They may study in one of the faculty's departments or allied institutes, or at other centres of excellence interstate or overseas. The calibre of these units was high, with many prestigious local and international institutions participating in the program, including the Walter and Eliza Hall Institute of Medical Research, the Peter MacCallum Cancer Research Institute, the Macfarlane Burnet Institute for Medical Research and Public Health, the Mayo Clinic (USA), Harvard Medical School (USA), Imperial College (UK), and Johns Hopkins Singapore (Singapore). To view the complete range, please visit the website (<http://www.medfac.unimelb.edu.au/ams>).

Three students write about their AMS year below—Claire Gordon, Danielle Allen and Katie Mendra.

Susan Elliott is Director of the Faculty of Medicine, Dentistry and Health Sciences Education Unit

TVW Institute for Child Health Research

BY CLAIRE GORDON

THE INTERNATIONALLY RENOWNED Institute for Child Health Research in Perth, Western Australia, conducts many research programs. These involve Aboriginal health, asthma and allergies, birth defects, childhood disabilities and death, child and adolescent mental health, infectious diseases, leukaemia and cancer, and perinatal epidemiology.

I spent my AMS year involved in two projects at the institute. The first was based on an ongoing prospective cohort study in Kalgoorlie-Boulder that investigated demographic, socio-economic, environmental, microbiological and immunological risk factors associated with otitis media from birth to two years. My research focused on the demographic, socio-economic and environmental risk factors. Possible risk factors were ethnicity, early disease onset, gender, family history of middle ear disease, child care, parental smoking, breast-feeding, pacifier use, presence of a sibling, seasonality, nutritional status, birth weight, crowding and other demographic variables.

I was also part of a smaller project. In 1996-98 a large cystic fibrosis (CF) population screening project was undertaken in Perth. On a routine visit to a general practice or family planning clinic, 5102 individuals completed questionnaires about their knowledge of CF and the Spielberger State Anxiety Inventory. Participants were then offered CF screening. Of the 43.5 per cent who chose to be tested for the delta F508 CF transmembrane conductance regulator mutation, 69 carriers were detected. At between three to six months and again at eighteen months post-testing, all detected carriers plus a random sample of test-negative individuals and those not tested

were sent follow-up questionnaires containing CF knowledge questions and psychological measures to determine the impact of testing. I analysed the eighteen-month follow-up data, comparing it to the three-to-six-month follow-up information.

To enhance my knowledge of the population side of medical research I undertook two post-graduate subjects in epidemiology and biostatistics at the University of Western Australia. This gave me the information and experience to thoroughly perform literacy reviews and to understand how to conduct quality population research, as well as a familiarity with common methods of statistical analysis and the ability to competently analyse data.

The AMS year has given me an opportunity to broaden my experience in the field of medical research and to improve my self-directed learning skills. My projects enabled me to join ENT clinics in the outer Perth areas, get a glimpse of paediatrics, experience an Aboriginal cultural awareness weekend, travel to Kalgoorlie and surrounding areas, visit the Burringurrah community and participate in an epidemiology conference. Compared to the pre-clinical years at the University of Melbourne, the AMS year demands more independence and professionalism from students. Supervisors provide guidance when needed, but most work is conducted individually using your own ideas. The onus is on the student: the success of your AMS year depends on your own dedication and on your enthusiasm for the research.

Producing Community Health Status Reports for Katherine West Communities

BY DANIELLE ALLEN

ALTHOUGH A YEAR of research did not really appeal to me, I decided to get the most out of it and set myself two aims for the year: to get out of Melbourne and to do something interesting. With this in mind, I called the Menzies School of Health Research in Darwin to see if there were any projects I could join. It turned out that the Katherine West Health Board (KWHB) Aboriginal Corporation was looking for someone to do a project for them—I agreed to do it, packed my car and drove to Katherine.

On arrival I was pleasantly surprised: Katherine seemed like a nice town, the weather was great, the people were friendly, and my project outline looked interesting. The project involved producing a community health status report for each community in the Katherine West region, including Lajamanu, Kalkaringi/Daguragu, Timber Creek, and Yarralin/Pigeon Hole, for presentation to the board. The aim of the report was to highlight the health needs of the community, so that community members and health staff could work together to find solutions to their perceived needs. A major part of my project was to work out an effective way of presenting the health statistics so that community members of the board could understand them. After all, there is no use having lots of lovely statistics if no-one knows what you're talking about.

I began by consulting several people about the content of the reports, including KWHB health management staff, KWHB board members, and health centre staff (doctors, nurses and Aboriginal health workers). This consultation phase, combined with the data collection phase, which partly involved auditing patients' charts in the clinics, meant that I spent quite a bit of time 'out bush'. These bush trips (whether flying or driving) proved rather interesting. Along the way I saw a range of wildlife (six-foot tall kangaroos, dingoes, bush turkeys, and wild horses), and some amazing scenery (such as the waterfalls off the escarpment at Jasper Gorge). There was also the excitement of not knowing whether you would be flooded in when you woke up in the morning, and the wheel falling off the four-wheel-drive on a dirt road in the middle of nowhere (true, luckily a mechanic from a cattle station came along and helped us out!). The best part of my AMS experience though, was talking to and learning from the Aboriginal people I met. The health workers, board members, members of the stolen generation, and friendly people on the street all educated me with their stories and with their silence. Even if my research didn't break any ground, the knowledge I gained about Aboriginal culture and remote medicine made it worthwhile.

St Jude Children's Research Hospital, Memphis, Tennessee

BY KATIE MENDRA

MY RESEARCH YEAR in the Department of Developmental Neurobiology at the St Jude Children's Research Hospital, has overthrown my preconceptions of science and exposed me to a powerful environment where science and medicine pursue cures for catastrophic childhood illness.

St Jude is the leading paediatric cancer hospital in the world and an advanced scientific research institute. Philanthropic funding provides treatment for children irrespective of family finances, and supports unrestrained, discovery-oriented science.

Research topics within the Department of Developmental Neurobiology are diverse, but the department works in conjunction with clinical medicine through involvement in the St Jude brain tumour program focused on medulloblastoma, the most common paediatric brain malignancy.

My role was to investigate differences in gene expression among cell lines derived from mouse models of medulloblastoma. Part of my weekly routine involved shadowing a neuro-oncologist, and I enjoyed traversing both sides of a progressive laboratory-clinic interface.

I floated into this ocean on a raft bound by thin twine: preclinical medicine and naive expectation. I capsized swiftly. Rather than meeting my anticipated prospects of clear, calm blue sailing—mastered techniques, data and published results—I soon gathered, drenched and shocked, that water is dangerous for those learning to swim. The laboratory bench was a foreign frontier. Lacking the intuition endowed by a background in molecular biology, I floated in a confusing sea of protein, vectors and DNA, where the subtleties of membrane washing and test-tube flicking seemed

crucial. Added to this was the frustrating fact that despite time, strategy and meticulous care, experimental success is never guaranteed.

However, challenge is vital and invigorating. Learning to rethink, scrutinise and analyse has been extremely difficult, but refreshing. The people in my laboratory are driven and the pace is electric. I have great respect for the versatility needed to be a successful scientist: breadth and depth of knowledge, technical excellence, motivation and leadership, business acumen, pragmatic project selection, field awareness and networking, creativity and a passion for discovery.

Memphis contrasts its ancient Egyptian namesake, and is an awkward 'Paradise Lost' that nurtures both the wasteland and heartland of America. Barbeque, the Blues, Gracelands, the Bible Belt and southern hospitality coexist with a dawdling pace, a deserted downtown, inequitable race relations and civil rights that are rooted in Confederate sentiment, and an ugly chasm between the 'bad areas' and affluent suburbia.

My scent was for adventure and the journey was great. A research year presents the opportunity to evolve in an environment beyond volume-laden medicine semesters. I enjoy medicine and look forward to clinical school. My approach will now be with heightened drive and direction. Tremendous support launched my expedition to St Jude, and I offer grateful thanks to The Australian Medical Association, Foundation for Young Australians, St Jude Children's Research Hospital—in particular Professor Peter Doherty, Dr Tom Curran, Dr Joan Chesney and Linda Sangster—the University of Melbourne, Trinity College and the University of Tennessee.

CLINICAL SKILLS TRAINING IN THE NEW MEDICAL COURSE

BY ASSOCIATE PROFESSOR SUSAN ELLIOTT AND DR JENNIFER CONN

THE NEW MEDICAL course is built upon four domains: the Scientific Basis of Medicine, Population Health, Professional Attitudes and Development and Clinical Skills. Unsurprisingly, the Clinical Skills domain is the most popular with students. Within this domain students learn the skills of effective communication and physical examination and how to safely and competently perform procedures required of an intern.

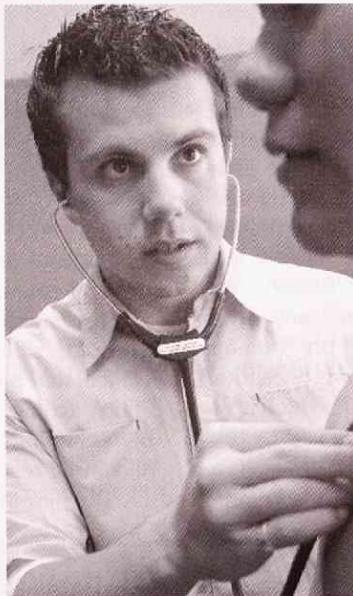
Teaching of clinical skills starts in the second week of the medical course, focusing on communication skills. Emphasis is initially on talking with and listening to patients—using small talk to put a patient at ease, using an open questioning style to elicit maximum information from a medical interview and how to give information. Students observe expert consultations then role play in small tutorial groups before practising their communication skills with simulated patients.

The Department of General Practice has developed a bank of simulated patients who can portray many conditions. Simulated patients provide a safe environment for students to learn and practise many skills, particularly skills a student would be unable to practise with 'real' patients. For example, most new graduates dread giving bad news. Simulated patients can portray a patient with a newly diagnosed serious or fatal illness so students can practise in a realistic setting and receive feedback on their performance. Simulated patients can also portray aggressive patients, angry parents, patients with a barrier to easy communication and excessively flirtatious patients, to prepare students for these stressful situations. Later sessions focus on presentation skills and communicating with carers, colleagues and other health professionals.

Students are also introduced to physical examination in first year. The initial goals are for students to develop confidence examining patients, to be able to communicate effectively and sensitively with patients during the examination, and to master the psychomotor skills required to carry out individual manoeuvres. These skills are introduced in a systems-based fashion, concurrent with teaching in the Scientific Basis of Medicine domain and linked with the PBL tutorials. In second year, for example, while studying the basic sciences related to the respiratory system, students learn to perform an examination of this system, including measurement of peak expiratory flow rate. They are encouraged to link their clinical skills with their knowledge of the relevant anatomy and physiology. A clinical placement, where students talk with asthma patients, consolidates the material presented in a PBL about this condition.

The early clinical skills course is presented in a structured manner. Students begin by watching a video of a clinician performing a physical examination. The tutor then demonstrates the examination on a volunteer student before the students group into pairs for simulated peer practice. The videos are produced in-house and stored on the hard-drive of the computer in each clinical skills room so that students may view them at any time. During the following week, students visit a clinical site to practise their skills with real patients.

An exciting innovation in the physical examination skills program is the introduction of Clinical Teaching Associates (CTAs)—a group of women specially trained to teach students



FIRST YEAR STUDENT, JOHN CICUILLA,
DURING A CLINICAL SKILLS WORKSHOP

how to perform sensitive examinations, namely breast and per vaginal examinations. Working in pairs, students examine the breasts of a CTA and are given feedback by the CTA about their examination technique and communication skills. Students describe the experience as extremely valuable, largely because the CTAs provide specific feedback and put the students at ease.

A similar approach is used to teach practical and procedural skills. In the first three years of the course students are expected to master hand washing, inserting eye drops and rudimentary first aid skills such as basic CPR and bandaging. In the fourth and fifth years of the course, students are expected to become competent in a range of procedural and practical skills, predominantly in simulated and supervised situations. These skills are taught in an integrated manner during relevant clinical rotations, mostly in the clinical skills resource centres that are being planned for each clinical school.

Clinical skills resource centres are being introduced into medical schools worldwide.

Staffed by nurse educators and medical practitioners, these centres are typically located in unoccupied wards and equipped with examination bays, light boxes and a number of models or manikins that are used to teach procedural skills. There are manikins for teaching venepuncture, IV line insertion, arterial puncture and lumbar puncture. Others are realistic wound models used to teach wound management, including suturing. Yet another can be used to teach digital rectal examinations—a replacable prostate gland allows the student to feel a realistic array of common prostatic disorders.

Each new procedural or practical skill will be presented gradually, first through demonstration by a tutor and by observing audiovisual material. Students then practise on the manikins under supervision before proceeding to supervised experience in real clinical settings. In the final year of the course students will make the transition towards independence in the procedural and practical skills required of them upon graduation.

Students are not only instructed in the psychomotor skills required for a procedure. They also learn about the context in which the procedure is performed. Links are created with the relevant basic and clinical sciences so that students understand the indications for and the risks involved in a particular procedure. Students also discuss relevant professional development issues, such as understanding one's limitations in the clinical environment and the ethical or legal responsibilities of the practitioner.

This emphasis on early clinical training and practice represents a shift in the teaching and learning of clinical skills. This shift is not intended to devalue or undermine bedside teaching and learning. It is grounded in an acknowledgment that clinical skills can be taught and learned—they are not just innate personal characteristics of the doctor. It also acknowledges the importance of each patient encounter and that real patients should not be used for first attempts at skills that can, in inexperienced hands, cause distress, embarrassment and pain. Both our patients and our students benefit from a safe, structured and supportive learning environment.

*Susan Elliott is Director of the Faculty Education Unit
Jennifer Conn is a Senior Lecturer in the Faculty Education Unit*

THE MURDOCH CHILDRENS RESEARCH INSTITUTE

BY PROFESSOR BOB WILLIAMSON, FRS, FAA

DIRECTOR, MURDOCH CHILDRENS RESEARCH INSTITUTE



BOB WILLIAMSON

THE MELBOURNE BIOMEDICAL research institutes have a wonderful tradition dating back to a period when research could be performed in a single area of medical research. The Walter and Eliza Hall worked on immunology and cell biology, the Florey on endocrinology, the Baker on cardiovascular disease and the Murdoch, of course, on human medical genetics. Each of these four were 'block grant funded', which is to say that each was recognised by the National Health & Medical Research Council (NHMRC) as one of an elite

group having a national role in its research area. Other excellent institutes, such as the Austin, the Macfarlane Burnet and the Institute for Reproduction and Development, also pursued areas of research based on groups of doctors, scientists and patients at one site.

The Murdoch Institute was founded by Professor David Danks, an international figure in human genetics research and for a time Stevenson Professor of Paediatrics at the University of Melbourne. It was one of the first research institutes in the world to study human medical genetics in a single-minded way at the highest standard.

Then the world changed. About ten years ago it became apparent that fields were merging and melding, and that many exciting research areas could no longer be easily delineated. It was becoming clear that human genetics involved the action of multiple genes interacting with environment to determine complex diseases, such as obesity and attention deficit disorder, and even drug addiction. Any research into infants and children could not ignore the public health and family issues within which diseases are played out. The opportunities for a different sort of collaboration became clear. As a result, the 'old' Murdoch Institute, with its strengths in human clinical genetics practice, diagnosis and research and ethics/education, merged in 2000 with the Royal Children's Hospital Research Institute, strong in clinical research and in public health.

The merger has been very successful! The institute is very proud that it has doubled its research grant income from about \$7 million per annum in 1999 (for the two institutes) to about \$14 million for the combined Murdoch Childrens Research Institute (MCRI) in 2002. However, it is not easy to maintain research groups that are internationally competitive in

Australia; we do not have the critical mass of funding that is to be found in the United States and Europe, nor the backing of major pharmaceutical and biotech companies. We have to be very proactive and aggressive in our approach to research funding.

What are the unique roles of a medical research institute such as the Murdoch Childrens in the year 2002? First, an institute devotes its full resources to research. Second, in medical research there can be great advantages in having an institute based in a major academic hospital and child health precinct, where it is possible to bring together laboratory, clinical and public health research. Finally, an institute has the ability to use donations wisely and flexibly, to participate in biotechnology initiatives and to exercise strong leadership in allocating resources to priority areas.

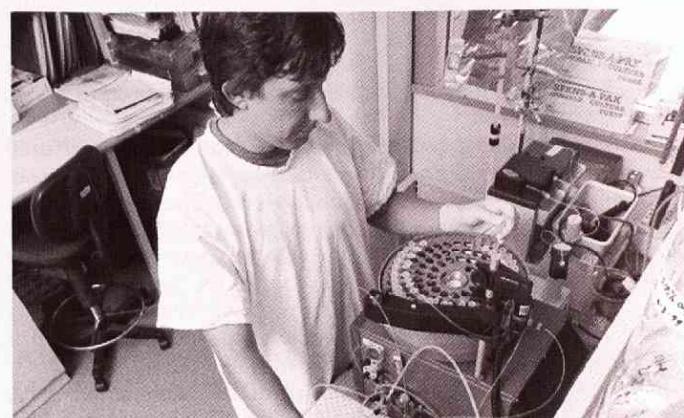
The new Murdoch Childrens Research Institute is unusual in

its wide range of research. Because it joined the research teams working in human molecular and clinical genetics and related ethical and educational issues (the 'old Murdoch Institute') with those working in clinical and laboratory paediatrics and public health (the Royal Children's Hospital Research Institute), it has unique opportunities to carry out interdisciplinary research. For example, the Centre for Adolescent Health, a research and clinical initiative of Professors Glenn Bowes, George Patton and Susan Sawyer, has studied smoking, alcohol use and drug use for many years and at the Murdoch, Susan Forrest and I worked on human gene mapping. By putting these

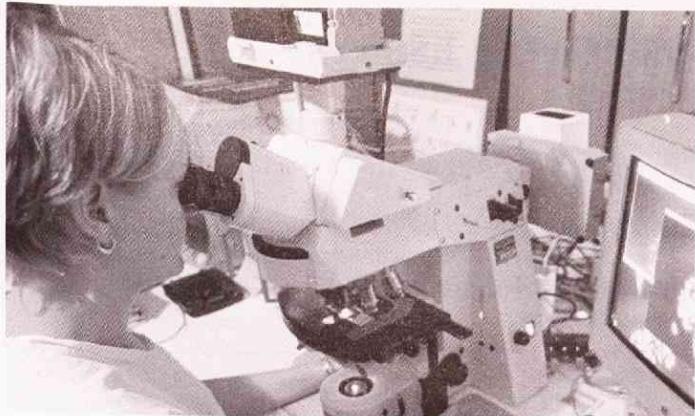
together genes that contribute to whether someone becomes addicted easily or with difficulty, have been identified.



A YOUNG BABY BEING CARED FOR IN THE NEONATOLOGY UNIT. THANKS TO
RESEARCH BEING PERFORMED AT THE MCRI HER CHANCES OF A HEALTHY FUTURE
ARE GREATLY IMPROVED



CHECKING FOR MUTATION CAUSING BRITTLE BONES IN THE CELL AND MATRIX BIOLOGY LABORATORY



MANDY SIBSON CHECKING FOR DOWN SYNDROME IN THE ARTIFICIAL CHROMOSOME RESEARCH LABORATORY

Consider another area where we have a major commitment—the health outcomes of prematurely born babies. As recently as fifty years ago, it was rare for a baby born before thirty weeks of pregnancy to survive. Due to advances in neonatal medicine, babies born as early as twenty-five weeks can now live, but require intensive care to compensate for the immaturity of their lungs and nervous system. Many of these babies grow up to be healthy children and adults, but unfortunately some do not. There is a high incidence of cerebral palsy in very premature babies, and some seem to have continuing problems even at school age, when Attention Deficit Disorder may occur.

Why? Why do some babies born at twenty-six weeks grow healthy and others grow sick? Associate Professor Terrie Inder is using the most up-to-date imaging equipment to study brain development in these children, comparing them to those who continue to term in the womb. This involves collaboration between the Murdoch Childrens, the Royal Women's Hospital and Royal Children's Hospital neonatal unit, the Florey Institute (with excellent MRI equipment to study animal models of the disorder), and the clinical teams at the Royal Children's Hospital who care for the children as they grow up. So far Professor Inder has shown that there are indeed differences in the brain wiring in babies born prematurely, and she is considering how best to intervene to create a brain environment more comparable to that in the uterus.

A strong area of innovative and integrated research is the study of bone dysfunction. Some children are born with a mutation in the genes coding for collagen that causes 'brittle bone disease', or osteogenesis imperfecta. Professor John Bateman's team has defined many of these mutations, and shown how the changes in the protein account for the

symptoms of brittle bone disease and other musculoskeletal disorders. This information is fed back to families by the doctors and genetic counsellors of Genetic Health, the MCRI clinical genetics service. The orthopaedic surgeons and clinicians at the Royal Children's Hospital use the data to decide the best course of treatment.

We have spent a great deal of time trying to identify the directions research will take over the coming ten years. We have built on our strengths in genetics and genomics, clinical care, public health, education and ethics to encourage many new links both within and outside the institute. We want to be seen as a collaborative institute that works with the best throughout Victoria, Australia and the world. We have set up new teams working on DNA chips, under Professor Deon Venter, and hope to start a major initiative on stem cell research using pluripotent cells from patients to treat childhood diseases. An exciting new stem cell unit will try to develop stem cell therapies to make the brittle bones stronger, and to create new cartilage using stem cells from the individuals themselves. These stem cells may be modified by human artificial chromosomes to provide healthy copies of genes, a development from our colleague Professor Andy Choo. Finally, the ethics of all of these developments are considered by our ethics unit, headed by Professor Julian Savulescu, who leaves us soon to take up the Uehiri Chair in Applied Ethics at Oxford University.

All this effort is a result of the seamless integration of research efforts of the MCRI and Department of Paediatrics staff with the excellent clinicians of the Royal Children's Hospital, using generous internal theme grants specifically allocated to cement these partnerships.

The Murdoch Childrens Research Institute has over 100 students at any time shared among our 500 or so staff, mostly through the Department of Paediatrics of the University of Melbourne, with a smaller number at Latrobe, Monash and Deakin universities. Most students are reading for their PhDs or MDs (about two thirds have science qualifications and one third are clinicians). We also

have about twenty Honours and BMEDSc students at any time, a few Undergraduate Research Opportunities Program undergraduates through cooperative research centres, and students studying genetic counselling and public health. MCRI staff participate in teaching undergraduate medical and science students in many University of Melbourne courses. We try to make all of these students welcome, and have an extensive education and mentoring program in place.

The Royal Children's Hospital, including its Murdoch Childrens Research Institute as its research arm and the Department of Paediatrics of the University of Melbourne, can be seen to be one campus sharing the common agenda of improving the health and wellbeing of infants, children, adolescents and families.



MCRI'S CANCER RESEARCH AND TRIALS ARE LEADING INTERNATIONALLY, HELPING YOUNG VICTORIAN CHILDREN LIKE TAYLA FIGHT FOR A HEALTHY FUTURE

2001 PETER G JONES ELECTIVE ESSAYS

The UMMS Elective Essay Prize was established in 1993 and renamed the Peter G Jones Elective Essay Prize in 1996. Prizes of \$100 are offered annually to final year students for the best essays of up to 1500 words describing the students' professional and personal experiences during their elective. Winning essays are also

considered for publication in *Chiron*. In 2001 prizes were awarded to Frank Lin for his essay *Business and Medicine in China*; to Jessica Kneebone for her essay *Transition in East Timor*; and to Paul Northway for his essay *Prisoners of Bedlam*. Edited versions of all three winning essays are published here.

Business and Medicine in China

BY FRANK LIN

THE POLITICAL COMMITTEE member looked up at me once more, as if to satisfy herself that I was still there, before turning back to her letter. An ancient electric fan whirled away in the corner, its blades making a dull, metallic sound as it pushed recycled air around the room. Dr Lu stood next to me, sweating under his long white coat, seemingly unfazed by the bureaucracy. The committee member finished writing the letter and opened a wooden box containing a jumble of seals and stamps. She placed one, and then another red stamp at the bottom of the letter. Signatures carry little weight in the People's Republic of China—only red stamps. She meticulously read over the letter once more and handed it to Dr Lu, adding, 'Give this to the unit manager, tell her we've approved the application'.

So began my elective at the Guangdong General Hospital, one of the newest, largest and soon-to-be privately owned hospitals in China. I was excited to be accepted—the hospital had received unprecedented press coverage and promised an experience far removed from my childhood memories of long, dim corridors, flickering lights and ten-bed rooms with wet floors. Even more, it was an elective in my country of birth, and despite an absence of more than ten years I have always felt an attachment to its people.

The hospital itself is impressive, with three complexes of some 1500 beds situated on prime real estate near the centre of the city. There it stands, like a palace, with immense sculptures and fountains outside, and tall pillars and shiny granite floors in the foyer. There is even a multistorey car park—something undreamt of a mere ten years ago. It was built by the state to be more than just a hospital—it symbolises a new China with all its newfound wealth and economic power.

There were no sirens, just men shouting. I looked up and saw four men carrying another through the emergency entrance. They were *mingong*, labourers from the poorer provinces in central China who work for a few hundred *yuan* a month in the larger, coastal cities. Sadly, most people regard them as a necessary but troublesome part of the cityscape, as they not only form the backbone of the construction industry but also contribute in no small way to the crime rate.

These men were from the construction site adjacent to the hospital. A fall from the second floor onto a piece of metal piping had opened a gaping hole in the man's right chest. There was surprisingly little blood, but with each ragged breath a large skin flap opened and closed. One man frantically called for help from the nearby nurses. A calm and collected emergency physician appeared. He took one look at the men and to my utter amazement said, 'Go down this corridor and place a deposit with accounts'. The men stared at him. It seemed painfully obvious that they had no money to pay even for gauze, much less for the surgery this man would surely need. 'I'm sorry, we do not treat patients without a deposit. It is hospital policy', the doctor said, pointing to a red notice on the wall of the

emergency reception area. And sure enough, it was all there: the writing on the wall.

Three of the four immediately set off to get the deposit—two thousand *yuan*, more than their combined monthly wages. In the treatment room resuscitation was underway, in 'good faith' that the three would return with the payment. However, both the charge nurse and the treating doctor flatly refused to do anything more until the patient's friends came back. It felt all wrong to be standing in a room that was built for a purpose but to be prevented from carrying out that purpose. And for what? The emergency department was otherwise quiet. The sounds of distant traffic filtered through as I left the room. I wandered back to the office, where another doctor looked over at me and said, 'If we treat that man without payment, he will discharge himself as soon as he is able and never be heard from again. It has happened too many times with *mingong*'. There was a pause. 'There is nothing we can do, we are doctors but it is policy that the hospital dictates to us, which is forced on them by a government that has 1.2 billion other people to pay for.' And that's the way it was.

The ward round finished. The six surgeons of general surgery unit one strolled back as the residents went to work. I followed Dr Lu back to his office as he explained the morning's procedures. As associate chief of general surgery, he had the luxury of his own office. The morning's list was a short one for him. He was to operate on haemorrhoids on an executive of a state-owned company that made televisions. This schedule was not in the least out of the ordinary for him. Since he had many *guan xi* (connections) in high places, he was often called upon to manage their minor ailments, as well as those of their friends and families. The man's arrival heralded some activity in the office and tea was poured and brought to the table. I was introduced as the 'foreign' medical student. He said that his son was studying in Canada—business, of course, not medicine. Here was one of the nouveau riche for whom the hospital had built its carpark and its nice foyer.

On my last day at the hospital, I walked out of the front entrance with a letter in my hand, my assessment, co-signed by Dr Lu and the political committee member. Presumably there was a red stamp on it, too. I walked past the pillars and sculptures that had long since ceased to impress me. On this elective I had learned perhaps more than I had wanted to. It was indeed true that the hospitals are no longer the dim, crowded places they used to be. But, fundamentally, many things had remained the same, such as the level of care provided to the poor. Many people say that today's China is like the first world nations twenty years ago, with remarkable economic growth and an increasingly wide gap between the rich and poor. Maybe I had thought that the practice of medicine was somehow above all of that. But here it was business, of course, not medicine.

The names of people and places in this essay have been changed

Transition in East Timor

BY JESSICA KNEEBONE

CASTING MY MIND back to first year, I remember how distant the fifth year elective seemed. I also remember making a pledge to myself to do something interesting and unique for my elective. Five years and many ideas and schemes later, I was on my way to East Timor.

It had not been an easy elective to organise—after countless rejections and hours spent chasing contacts, I was beginning to despair when late one afternoon I received a one sentence affirmation: ‘Yes, it all looks fine, when do you think you’ll be able to join us?’. Suddenly, I was being invited to assist HealthNet with its project in East Timor. A subsection of Médecins Sans Frontières (MSF), HealthNet is a small Dutch-based Non-Government Organisation (NGO) with a mandate to develop sustainable health services in the post-emergency phase.

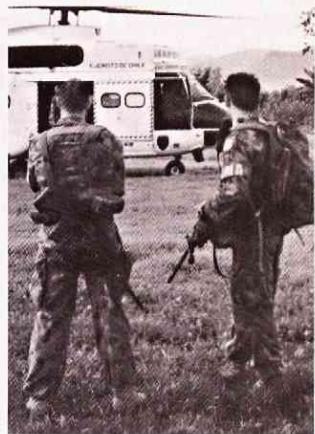
I travelled to East Timor seventeen months after the United Nations administered referendum. The flight from Darwin to Dili was short, so short I almost failed to appreciate the international significance of the journey, and East Timor seemed so small. In less than ten minutes we had flown right across the country—over the black surf beaches in the south and the green mountainous interior—and were circling around Dili’s harbour to land. Driving into Dili, I was struck by the extent of the destruction caused by militia groups during their post-referendum rampage of burning, looting, rape and murder—entire streets were lined with charred stumps, smashed and blackened shop facades, mounds of dirty rubble and burnt out cars and buses. In the same frame of vision a convoy of large, white UN cars converged on a palatial restaurant which was filled with smartly dressed expatriates sipping cool beverages and dining on expensive imported food. East Timor is a country of undisguised disparities.

HealthNet took over from MSF as the principal health care provider in Maliana and the surrounding Bobonaro district in 2000, when the country shifted from the emergency phase to the development phase. Two expatriate HealthNet doctors worked alongside a young Timorese doctor and a doctor from the Jesuit Refugee Service in Melbourne. Together they provided a twenty-four hour, on-call service to the twenty-five bed hospital in Maliana and coordinated mobile clinics to a district population of 70 000. They also advised the United Nations on future health policies, trained nursing staff and sorted out logistical problems.

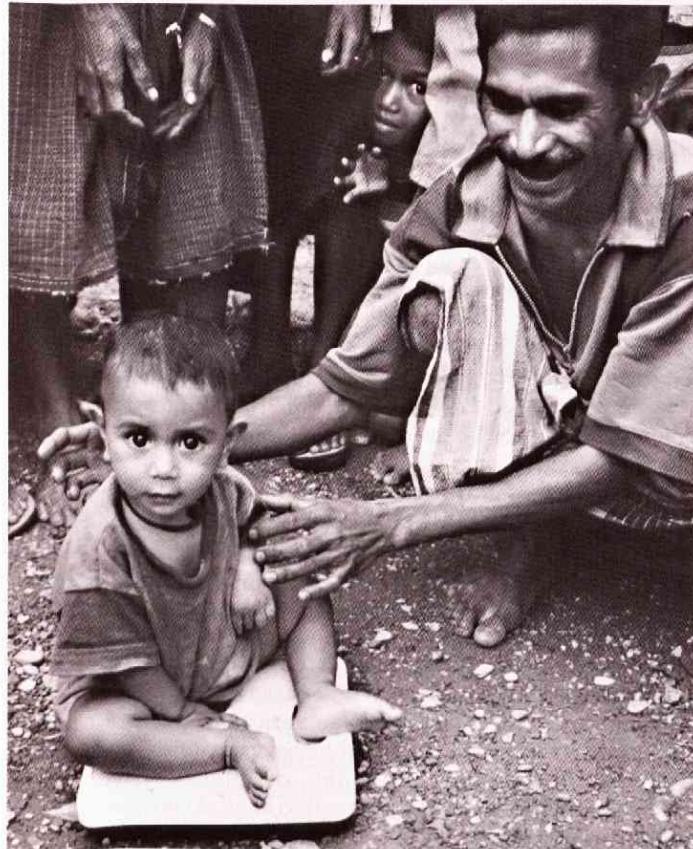
I call Maliana Hospital a ‘hospital’ but it was really no more than a few glorified rooms with beds. Once part of a busy hospital complex, it was largely destroyed by the militia. There were no monitoring facilities, the only diagnostic service was blood films for malarial analysis and drug supplies were limited and tended to be old, cheaper drugs no longer in use in western countries. Patients requiring care beyond the resources of Maliana Hospital were evacuated to the International Committee for Red Cross Hospital in Dili, a journey made either by a four hour trip on rough roads or, if seriously ill, by military helicopter.

Few people in East Timor live beyond sixty years, but I was still shocked by the high numbers of children and young adults dying. One young woman in particular stands out from the others. Desperately ill when admitted to hospital with what we suspected to be extra-pulmonary breast Tuberculosis, she lay languishing in bed for one week. We drained her gross ascites, gave her painkillers and tried everything within our limited resources to reduce her suffering. After several days with no improvement, she lucidly told us that her deceased uncle had come to her in a dream and told her he had her soul and was waiting for her to join him. She asked for all treatment to be ceased and, later that afternoon, she died. At that moment, the room became bathed in blinding golden twilight. We learnt later that the same family had been recently bereaved by the death of one of their sons from a lightning strike. Stories like this were not uncommon.

Another enduring memory is of the morning I spent conducting a mobile clinic in a small mountain village. Escorted by seven soldiers, I flew to the village in a camouflaged military helicopter. This was the first time I had been on a clinic by myself and I found myself thrust into a position of responsibility. There was no-one to check my decisions, tell me what to do, correct or criticise my technique. Instead, people were calling me ‘doctor’ and there was a growing line of patients waiting to be seen. The only sheltered area I could find was a disused school, with a lesson dating from pre-referendum days still scratched on the blackboard. I opened my drug case on an old wooden desk and set up my wound clinic on another. Outside, six of the seven soldiers were playing cricket. The seventh was hovering with interest so I employed him as my pharmacist. While I listened to patients’ histories and examined bodies, he filled plastic sleeves with the appropriate drugs, under my instructions.



UN HELICOPTER AND SOLDIERS WITH GUNS



CHILD BEING WEIGHED AT THE MOBILE CLINIC

I think at some stage in every medical student's journey there comes a realisation that the point is not to be a medical student forever, but to complete the metamorphosis from student to doctor. I understood this concept for the first time in that cloud-shrouded mountain village.

Two months passed quickly and my time in East Timor now seems distant and removed from my life. There are many things I miss—the helicopter and tank rides with the army, the

changing colours of the mountains, the languid tropical evenings—but above all I miss the people. I miss the doctors I lived and worked with, I miss the Timorese I met and became close to, I miss the expatriate social gatherings where different cultures and professions would collide and dance the nights out together. Yet despite my sadness at leaving behind so many happy times, I realise what I have gained and know that opportunities such as these lie waiting for me in the future.

Prisoners of Bedlam

BY PAUL NORTHWAY

ENTERING BROADMOOR TOOK some time. Collecting my visitor's badge, I would deposit my bag in a locker, empty my pockets, walk through the metal detector, be thoroughly frisked, and have the contents of my wallet and notepad examined. Then I would wait to be escorted within the grounds by a staff member with keys to the internal gates and doors. Perimeter security included high-definition video camera surveillance, electronic sensors on roofs and surrounding walls, even covers on drainpipes to make them impossible to climb.

I had come to the Institute of Psychiatry in London to do an elective in forensic psychiatry. I knew little about this field, but was interested in personality disorders and the interplay between personality and 'Axis I' disorders. Forensic psychiatry seemed to offer the opportunity to explore these issues and do something a little different. I was to find that my elective would give me a very different and unexpected perspective on medicine.

My first clinical placement was at the Bethlem Royal Hospital—the famed 'Bedlam'—where I was attached to the Dennis Hill Unit, a 'medium' security unit for mentally disordered male offenders.

At Broadmoor Hospital—a purpose-built, high-security hospital—I visited Woodstock ward, which specialised in treating young male offenders with personality disorders, or 'psychopathic disorder' in medico-legal terminology.

Forensic psychiatrists treat the mentally ill who are on remand awaiting trial, mentally ill offenders of diminished responsibility who are effectively 'sentenced' to hospital, and prisoners whose mental illness presents after conviction. Forensic psychiatrists must assess the dangerousness of a patient to staff and the community, determine the appropriate level of care and security, when they are ready for discharge and with what attendant conditions. Managing this risk is a primary concern, and it involves more than bars and locks. It involves set procedures, such as performing regular observations, and is managed in a relational sense by informing nursing staff as to when a patient is to be interviewed, where and for how long, and by being careful never to be alone or out of sight of other staff.

Their very admission to a forensic psychiatric unit often prompted patients to re-evaluate themselves and their actions. Many expressed shock and dismay at being diagnosed with a mental illness. Some stated a preference for a prison sentence, which would be of set duration and not involve therapy and attendant scrutiny. While acknowledging their offences, patients



THE ENTRANCE TO BETHLEM ROYAL HOSPITAL (1930s SITE).

disagreed with their diagnoses, particularly 'psychopathic disorder' or personality disorder. Although this potentially reflected lack of insight, the stigma of being a forensic patient was clearly significant. Patients tended to avoid discussing their offences in detail or to minimise their severity—a process of impression management that seemed as much to maintain their self-esteem as to ensure that I had a favourable view of them.

I was acutely aware that within the ward I was on the 'side' of authority: doctors. Although introducing myself as a medical student, I would be greeted as 'doctor'. Having taken a history, I would be asked my opinion of their illness and the circumstances of their detention. Talking with a group of patients relatively new to Woodstock about how they found the ward, I was candidly told that they did not accept their diagnoses of personality disorder but were 'playing the game': doing and saying whatever they thought staff wanted so as to be discharged as soon as possible.

This caution by patients highlights the unique powers and responsibilities of forensic psychiatrists. Detention of patients in a forensic psychiatric ward is under the supervision and authority of the Mental Health Unit of the Home Office: a section of the civil service. Home Office authority is required for patient admission or discharge, transfer between facilities, or day leave into the community. The duties of forensic psychiatrists therefore include both patient-centred clinical care and advising government agencies on the level and management of the risk a patient poses.

During my elective, the English Government published a white paper proposing many changes to their *Mental Health Act*. Included was the notion of 'Dangerous Severe Personality Disorder' (DSPD). The proposed legislation placed a primary duty on psychiatrists to protect the public and enabled the detention of people identified as DSPD, irrespective of the psychiatrist's ability to offer any treatment. Treatment would be an added benefit, but not the primary aim of detention. I was alarmed by this apparent use of pseudo-medical jargon and the medical establishment to legitimise what was effectively the detention of 'undesirable' elements in society, perhaps indefinitely. Moreover, this focus on dangerousness and public safety could increase the stigma of mental illness and cause a shift within mental health services. The potential for litigation would make health services unwilling to discharge potentially 'risky' patients, effectively young males with psychosis, with shortages of resources for less risky (to others) depressed and suicidal patients.

Many clinicians I spoke to saw the white paper as a politically-motivated government response to sensationalistic media reporting. I understood this mechanism while writing this essay, when reading reports about an absconded forensic patient. Some sections of the media used terms like '*deranged gunman*' or '*homicidal maniac*' and a newspaper juxtaposed reports on the front page with an image of a snarling dog and the subtitle '*bred to kill*'. This response demonstrates how for many people forensic psychiatric patients represent the most confronting and fear-provoking aspect of mental illness: the potential for violence.

Early in my elective, a consultant forensic psychiatrist suggested that forensic psychiatry did not exist as a true subspecialty. It deals with the same clinical entities as general adult psychiatry, only in a different setting. This perspective helped

strip away much of the apparent novelty of the field and the patients.

Clerking patients helped me understand the myriad and complex causes of human behaviour, and tested my capacity for empathy. Looking beyond the locks, these patients were not so different from those I had met on general adult psychiatric wards, who often also possessed a forensic history. Concomitant psychotic illness, an unstable or abusive family, substance abuse, limited education, limited employment, head injury, family history of mental illness, childhood mental illness or conduct problems, poor interpersonal relationships, mental impairment, poor coping skills, physical or sexual abuse—the life stories of many patients I met were exceptional only in the sheer number of mental illness risk factors that were present, of which many seemed social in origin. I learned to reject easy answers. There was no one cause for their offences, but rather the convergence of both patient and environmental factors, mixed in with a good measure of random chance.

My elective gave me a new appreciation of the role of medicine and doctors within society. I observed the authority given to psychiatrists and their professional opinions. I also saw that the language and trappings of psychiatry can be appropriated and misused for political ends, as easily now as in the past. The authority given to doctors is justified by the ability and desire to heal. The patients I met had committed offences and been diagnosed with mental illnesses. Their detention within forensic psychiatric services came with the hope that treatment might reduce the danger they posed to others. Using unsupported pseudo-medical 'diagnoses', without the intention to treat, would make these people patients in name only. They would be prisoners of psychiatric services: prisoners of Bedlam.

THE UNIVERSITY OF MELBOURNE 150th Anniversary

In February 1853, the Victorian Colonial Legislative Council passed the Bill that established the University of Melbourne. In 2003, the university will celebrate 150 years of teaching and research excellence.

The University of Melbourne has been a defining institution in the social, cultural and scientific life of its home city, its state and the nation. It has made a leading contribution to the development of research and learning in Australia. It was the first of Australia's universities to award PhDs, in 1948. The CSIRO, the Australian National University, and other significant developments such as the National Museum, now Museum Victoria, all trace back their origins to people and initiatives associated with the University of Melbourne.

The University of Melbourne 150th Anniversary celebrations planned for 2003 under the themes 'Giving to Students and the Community' and 'A Sense of History' seek to showcase many of the university's treasures, and involve the community in different ways. A small projects grant program has been operating since 2001. This has funded around thirty projects including exhibitions, publications, reunions and online databases. The University Medical History Museum and an on-line historical compendium of Medicine, Dentistry and Health Science have both received project funding.



THE FIRST TWO MEDICAL SCHOOL BUILDINGS AT THE UNIVERSITY OF MELBOURNE C. 1900. THE 1864 BUILDING WITH PORTICO IS ON THE EXTREME LEFT. THE 1886 BUILDING (MORE RECENTLY KNOWN AS 'OLD PATHOLOGY') STILL STANDS AND IS NOW KNOWN AS THE ELISABETH MURDOCH BUILDING

Alumni, current and former staff, students, families of staff or students, and friends of the university in the community are all invited to participate in the celebrations. Further information can be obtained by email on 150th-anniversary@unimelb.edu.au or phoning David Crotty on (+61 3) 8344 0906. The Anniversary website will be available at www.unimelb.edu.au/150 from the end of June 2002.

BRINGING THEATRE TO THE MEDICAL SCHOOL

OVER EIGHT HUNDRED medical and other health professional students paused during their 'core' studies in May 2001 to experience a theatrical interpretation of an encounter with death in a one-act play written and performed especially for them.

This unusual educational event arose out of my own growing conviction that the humanities are an essential teaching aide for the complete professional development of the doctor and other health professionals.

Having used Leo Tolstoy's great novella *The Death of Ivan Ilych* for several years to highlight our ultimate confrontation with our own mortality, I felt emboldened to commission an adaptation for the stage from the eminent playwright Jack Hibberd, himself a practising doctor. A professional cast under the direction of Daniel Schlusser did a splendid job in bringing the text alive.

The performance, however, was not all one-way. As soon as the actors and director had taken their bows, I called on each night's audience to interact with the cast in an exchange of impressions of their reactions to the portrayal of the dying Ilych and the attitude of his doctors, family and friends. These 'dialogues', occupying as much time as the performances themselves, were extraordinarily rich in illuminating the 'human' dimension of medical practice.

The success of what probably is the first use of theatre in the University of Melbourne Medical School has encouraged me to inject more of the humanities into our teaching program. I see *The Death of Ivan Ilych* as the first of a series of commissioned plays that could, I very much hope, become part of the medical curriculum and also of continuing professional education. Fortunately, I have obtained funds to commission two further plays—an adaptation of the *Book of Job*, in order to focus on the nature of meaningless suffering, and an entirely new creation on the life and ideas of Sigmund Freud.

I complement this use of drama with literature, film, music and the visual arts to highlight the role of empathy as a paramount attribute for doctors and other health professionals.

I would like to take the opportunity of thanking Pfizer and Dame Elisabeth Murdoch for their generous funding of *Ilych*. Our gratitude also goes to the Dean and clinical sub-deans for contributing funds to mount an essay competition in conjunction with the theatrical performances. Students were



THE 2001 CAST OF THE DEATH OF IVAN ILYCH

There will be two repeat performances of *The Death of Ivan Ilych*, prior to an overseas season at the World Congress of the World Psychiatric Association, in Yokohama, Japan. UMMS members are invited to attend these performances on Wednesday 21 and Thursday 22 August 2002, at 6.30 pm to 8.30 pm (including discussion with the actors) at the Copeland Theatre, The University of Melbourne.

Entry is free and there is no need to book.

invited to write a short essay which conveyed how the experience of the play might influence their future role as a doctor. Hearty congratulations go to the three prize winners: Paul Northway (RMH), Vanessa Crawford (SVH) and Luke Ainsworth (RMH) who won \$500, \$250 and \$150 respectively for their excellent efforts.

by Professor Sidney Bloch
Department of Psychiatry and Centre for the Study of Health and Society

2001 EXCELLENCE IN TEACHING AWARDS

On 13 March 2002, medical students welcomed the announcement of the 2001 Excellence in Teaching Awards for the School of Medicine. Awards were presented to: Dr David Ebert from the Department of Biochemistry and Molecular Biology (First Year), Professor Tony Goodwin from the Department of Anatomy and Cell Biology (Second Year), and Ms Sandra Uren from the Department of Microbiology and Immunology (Third Year). Tony Goodwin received the award for the third successive year. David Ebert and Sandra Uren have also received the award in previous years.

The Excellence in Teaching Awards were introduced into the School of Medicine in 1998 as an opportunity for students to recognise quality teaching in the staff of the school. The awards are based on a ballot in which students in the first three years of the medical school have an opportunity to nominate their best teachers.



L-R: DR DAVID EBERT, MS SANDRA UREN AND PROFESSOR TONY GOODWIN AFTER RECEIVING THEIR 2001 EXCELLENCE IN TEACHING AWARDS

GRADUATES, PRIZES AND AWARDS

School of Medicine Graduates 2001

Bachelor of Medicine (1862) and Bachelor of Surgery (1879)

Daniel John Aras, Simon Antony Astechno, Arun Ahmed Azad, Yagnesh Vellore Balasubramanian, Bridget Emily Barber, Miriam Joy Bartlett, Jodie Elise Benson, Shane Anthony Blackmore, John Douglas Borowski, Veenacksee Devi Bucktowar, Martin Butt, James Charles Vereker Canty, Richard Paul Carnibella, Katherine Elizabeth Carroll, Brendan Chong-Meng Chan, Corrinne Wan-Ying Chan, Janette Yuk Sau Chan, Richard Oscar Chan, Noel Chi Fen Chan Wan Kai, Andrew Teik Hong Chen, Christine Yi Chin Chen, Daniel Feng-Yuan Chen, Man-Yiu Cheung, Angus Peng Tien Chew, Laura Nyet Lin Chin-Lenn, Fiona Joo Meng Chionh, James Jun Chiu, Smathi Kuoh K'yet Chong, Ze-Soong Geoffrey Chua, Christopher Hoe Kong Chui, Zabo Sze Pok Chung, Johanna Leigh Churches, Jennifer Collier, Sue Elizabeth Comerford, Piyumali De Silva, Yi-Feng Cindy Ding, Martin Richard Elmes, Alice Yann Wei Fang, Shaun Marcus Flint, Lian Im Fong, Michael Edward Franco, Luke Sean Gaffney, Jacobus Geertsema, Alexander Gershenzon, Jufri Ghazali, Katherine Jill Graham, Adrian Scott Grigo, Jonathon Peter Habersberger, Kathryn Lisa Hackman, Deddy Harsono, Molly Ka-Yee Ho, Mellanie Jade Hobbs, Darcy Quinn Holt, Maryam Horriat, Michael Wen-Chun Hsieh, Shirley Ching Hua Hsieh, Helen Hui-Chun Hsu, Kelvin Hsu, Jack Shao-Cheng Huang, Penelope Kate Hundt, Jenny Thuc Hue Huynh, Tinte Itinteang, Manika Jegathesan, Meera Joshi, Darren Jonathan Katz, Harvinder Kaur, Peter Graham Kelley, Cassandra Juliet Kenna, Hong Mei Khor, Anupama Kumar, Sharmini Fae Kumar, Jason Jer-Yuan Kuo, Arman Kuyumcian, Richard James La Nauze, Chung Fei Lai, David Lam, Sybin Anne Laragy, David Tsz Yan Lau, Lee Ing John Lau, Mandy Lau, Ngoc Thanh Bao Le, Philip Alexander Le Page, Hajeong Lee, Hojin Lee, Jimmy Cheng Yen Lee, Michael Kevin Saiho Lee, Monn Yee Lee, Olivia Lee Shien Hui, Sidney Kam Khuen Leong, Han Sung Lim, Kean Seng Andrew Lim, Tze Chi Lorraine Lim, Frank Gangming Lin, Dorothy Chung Ngar Liu, Philip Lo, Samuel Yeow Kwock Loh, Ken Jian Lu, Minh Anh Ho Mai, Kameel Yousif Marcus, Aidin Mohajeri, Michael Terk-Chuen Mok, Sarah Louise Moore, Olivia Claire Morris, William Phillip Craig Moss, Bradley Scott Murray, Saravanan Narayanan,

Christopher James Alan Neil, Julian Luan Nguyen, Uyen Hai Nguyen, Kim Alexander Nuyen, Allison Lyn O'Neill, Harn-Yih Ong, Jason Jiat Shern Ong, David Li Wei Pan, Pepic Vesna, Karl Ka Chun Poon, Rajeswari Devi Rajasekaram, Tal Rapke, Marie Christine Rauter, Narayanan Thanneermalai Renganathan, Sara Renwick-Lau, Hugh Alexander Roberts, Yuwei Julian Rong, Nicholas John Rutherford, Dewi Victoria Schrader, Cheryl Hsin-Ying See, Eric Ka Yu Sham, Ramin Shayan, Christine Chen-Yun Shih, Omar Reynolds Shum, Matthew Barry Sibbison, Chung Hing Eric So, Jane Fairchild Standish, Emma Kate Stewart-Prado, Ee Lyn Su, Arun Subramanian, Kirsty Peta Sullivan, Jeff Dai Tam, Kevin Wei-Pheng Tan, Sheng Neng Tan, Sue May Tan, Vincent Tan, Selene Tang Wei Lien, Dean Tey, Sylvia Tiong, Toma Hamid Toma, Karen Chee-Yan Tong, Phillip Vinh Phu Tran, Yen Tran, Austin Hoang Xuan Vo, Leonid Nikolaevich Volodin, Marian Hsi-Chinh Wang, Kristine Yvonne Wardle, James Po-Hsuan Wei, Rebecca Lani Werther, Bernard John Westley, Nirmalie Deepika Wijesiriwardana, Subashini Jayamala Wijewardena, Bianca Collette Wilson, Danica Wong, Lok Hun Wong, Lisa Pui Sze Wun, Aziz Yassiri, Lilian Eva Yuan, Alex Yuen, Nina Yannan Zhang, Annie Bin Bin Zhao, Yuxiang Zhou, John Zois

Bachelor of Medicine and Bachelor of Surgery with Honours (1997)

Naomi Siobhan Anderson, James Edward Bartlett, Siddhartha Baxi, Richard Maurice Bignell, William Chan, Ronil Vikesh Chandra, Susan Soon Mee Chang, Suet-Wan Choy, Kate Louise Dwyer, Eugene Teow-Hin Ek, Sarah Jeanmarie Foster, Neil Israelsohn, Jwu Jin Khong, Jessica Alice Kneebone, Cherry Ee Peck Koh, Eva Oi Wah Koo, Darren Hui Kwong Lee, Paul Cheuk Ying Lee, Brett James Manley, Andrew James Metz, Maree Elizabeth Micallef, Anh Tu Vu Nguyen, Brandon Trung Nguyen, Sant-Rayn Singh Pasricha, Gillian Ann Paulsen, Josephine Margaret Power, Siddharth Vettath Rajakumar, Priya Rajendra, Leonie Kathleen Ross, Trent Courtenay Roydhouse, Gabriel Lee Snyder, Jillian Kaye Tomlinson, Carley Barbara Vuillermin, Lih Ming Wong, Tricia Wei Chee Wong, Peik Fei Yau

Bachelor of Medical Science (1967)

Hiu Tat Chan

COMBINED COURSES

Bachelor of Arts and Bachelor of Medicine and Bachelor of Surgery

Rachel Susan Greta Lee, Navin Shiranth Rudolph, Leit-Chin Siew, Joshua Wolf

Bachelor of Arts (Degree with Honours) and Bachelor of Medicine and Bachelor of Surgery

Paul Richard Northway

Bachelor of Medicine and Bachelor of Surgery and Bachelor of Medical Science

Julien Ben Freitag, Angharad Caitlin Hayter, Dean Anthony Miller, Sanjeeva Ramasundara, Matthew Robert Salamonsen, Timothy James Shakespeare, David Sebastian Williams

Bachelor of Medicine and Bachelor of Surgery with Honours and Bachelor of Medical Science

Katherine Beverley Gibney, Amy Zigrida Gray, Joanne Yuen Yie Ngeow

Bachelor of Medicine and Bachelor of Surgery, Bachelor of Medical Science and Bachelor of Arts

Tom Laurence Clemens, Tram Tuong Nguyen

Bachelor of Medicine and Bachelor of Surgery, Bachelor of Medical Science and Bachelor of Arts (Degree with Honours)

Vanessa Olivia Clifford

MASTERS DEGREES

Master of Surgery (1885)

David Robert Bruce Theile

Master of Medicine (1983)

Alvin Heong On Chong, Minxi Li, Bose Vinod Moya, Geoffrey Grant Quail

Paediatrics

Le Tan Bao, Choeung Chea, Ngoc Rang Nguyen

Palliative Medicine

Alexandra Leslie Burke

Radiology

Peter John Mitchell

Women's Health

Janice Yvonne Coles

Psychiatry

Timothy Leonard Alexander, Peter Bosanac, Elizabeth Ann Faulkner, Arthur Kokkinias, Carolynne Joy Marks, Suresh Sundram, Maria Triglia

Master of Women's Health (1996)

Amanda Ruth Cooklin, Anne Marie McVeigh-Dowd, Megan Isabel Sarson-Lawrence, Ruth Tideman, Maria Inez Zuluaga

Master of Public Health (1999)

Megan Blackburn, Dominique Ann-Michele Cadilhac, Adele Christine Campain, Kim Susan Clayworth, Anthony Del Monaco, Stephen Gow, Philippa Jane Griffith, Kathryn Ann Hindell, Monique Femia Kilkenny, Joseph Allen Sakdalan, Hau Wai Grace Man, Dawn Marie Morris, John Odaga, Chandra Kirsten Oziemski, Jonathan Mark Pietsch, Clare Julia Reddrop, Irina Ross, Jane Louise Schuller, Bin Tong

Master of Clinical Audiology (2000)

Dianne Louise Bell, Leonie Michelle Black, Jacqueline Lee Cook, Rebecca Farrell, Suzanne Edith Ferris, Asheesh Gupta, David Michael Johns, Mary Mpouzmpas, Tracy Neistat, Ioannis Nikolarakos, Voula Panayiotis, Katarzyna Grazyna Pawlik, Dominic Peter Power, Rebekah Sophia Vaiopoulos, Nancy Vlachokyriakos, Alexandra May Weatherby, Sarah Brooke Young

Master of Health Ethics (2001)

Nicola Jane Kerruish, Michael Ezekiel Ben-Meir, Simon Marcus Plapp

DOCTORATES**Doctor of Philosophy (1948)**

Anatomy and Cell Biology
Gemma Martinez

Biochemistry and Molecular Biology
Steven Bozinovski, Craig Steven Clements, Tim Michael Johnson, Danuta Maria Maksel, Porntip Prapunpoj

Medicine

Deborah Anne Ainslie, Peter Egerton Batchelor, Jonathan Beilin, Michelle Maree Bradney, Mark Buzzia, Trevor Michael Corran, Katherine Elizabeth Crowley, Diem-Thuy Dinh, Margaret Joy Henry, John Kanellis, Bahtiyar Kaymakci, Irene Koukoulas, Francis Tat Yan Kung, Andrea Kyriacou-Odysseos, Ashley Maurice Miller, Anita Frances Quigley, Katrina Anne Reardon, Michael Damian Varney, Melinda Kate Venn, Dominic Michael Patrick Wall, Kim Margaret Wilson

Medical Biology

James Geoffrey Beeson, Effrossini Blanas, Gordon John Brooker, Rachel Anne Burt, Paul Gerald Ekert, Clare Helen Faux, Shaun Holmgreen, Mei Ann Lim, Jacqui Louise Montgomery, Rachael Theresa Richardson, Lynden John Roberts, Stephane Alain Vandenabeele, Chengchun Wang

Microbiology and Immunology

Jennifer Sue Allen, Karen Bentley, Raquel Ursula Cowan, Leanne Maree Harling-McNabb, Jim Vadolas, Vijaya Nagabhushanam, Rebecca O'Donnell, Catherine Anne Pogson, John Stambas, Tania Kirsten Uren

Molecular Biology

Katrina Mary Bell

Obstetrics and Gynaecology

Cathy Foca, Andrea Louise Niklaus

Ophthalmology

Rakhi Dandona

Paediatrics

Alyssa Ellen Barry, Stephanie Ruth Edmondson, Susan Burney, Janice Marie Fullerton, Carl Dunn Kirkwood, Win Ip Anthony Lo, Philip James Robinson, Vincenzo Russo, Lena Amanda Sanci

Pathology

Carmelina Apicella, Ross Alexander Dickins, Kirsten Mae Edwards, Stuart Kent Gribble, Michael Francis Jobling, Hannah Robertson, Leanne Rae Stewart

Pharmacology

Lucy Lay, Claire Elizabeth Ravenhall, Stavros Selemidis

Psychiatry

Gregory John Coman, Seetal Dodd, John Raymond Taffe, Suresh Sundram, Stephen James Ziguras

Physiology

Kathryn Louise Aldred, Xiaochun Bian, Jenny Anne Deague, Paul Gregorevic, Brendan Alexander Innes, Karen Margaret Moritz, David Robert Plant

Surgery

Briony Bartholomeusz, Dale Christiansen, Andrew Charles Oates, Bruce Robinson Thorley

Women's Health

Elizabeth Sutherland Bennett, Susan Lynn Bissell, Susan Maria Paxton

Doctor of Medicine (1862)

Gordon Baikie, Sally Jane Bell, Francis Joseph Bowden, Simon Peter Charles Bower, Helen Mary Cooley, Esther Yenson Chu, Michael Ronald Ditchfield, Anne Maria Hassett, Han Hui Liem, Dinah Susan Reddiough, John Hamilton Reeves, Donald James Bourne St John, Susan Philippa Walker, Howard Zeimer

**PRESNTATION OF A
UNIVERSITAS 21 FELLOWSHIP
FOR 2000**

Norman Eizenberg

DIPLOMAS GRANTED**Graduate Diploma in Adolescent Health and Welfare**

Nicola Ann Baker, Rowena Jane Beaumont, Nicole Cecilia Bishop, Warrick Frank Buckwell, Donna Maree Carroll, Angela Maree Cowland, Jennifer Mary Crook, Kaye Dorothy Curgenvan, Bridget Ann Curran, Alan Vincent Curtain, Jennifer Shirley Dyke, Maureen Fischer, John William Gallagher, Natalie Amanda Gleeson, Sharon Carol Hart, Gretchen Vivienne Hitchins, Amanda Sue Hutchison, Tracy Ann Healy, Peter Gradwell Holmes, Kerrie Leanne Iozzi, Lisa Mary James, Yvonne Mary Kane, Justine Maree Kiely-Scott, Lenche Kozmevski, Jason David Lynch, Karen Ann McCulloch, Margaret Ann Mercovich, Deborah Anne Moloughney, Susanne Munro, Alison Gaye Mynard, Cecilia Anne O'Brien, Katie Jane Richardson, John Michael Roberts, Julie Robinson, John Francis Samanna, Melanie Jane Sanders, Keith Simpson, Lynette Heather Smart, Sheryn Maree Stafford, Sandra Lee Tarrant, Jennifer Tremowen, Linda Jan Williams

Graduate Diploma in Audiological Science

Felicity Dolores Ash, Adreinne Louise Blechman, Benjamin Leigh Featherston, Hayley Jane Fiket, Bridget Clare Gale, Rafal Gawlowski, Rodney Maxwell Glance, Dino Hodge, Jane Marie Kidman, Kamila Alexandra Krauze, Mansze Lai, Jaime Roanne Leigh, Pei-Chen Liu, Fred Victor Matta, Sarah Louise McCullough, Michelle Pasinati, Campbell Dominic Stevens, Jessica Jane Vitkovic, Heidi Wai Chuen Wai, Katie Dorothy Webby, Erin Siobhan Winfield

Graduate Diploma in Biotechnology

Alison Mary Coutts, Kathelijne Sylvie Lefevere, Luciana Montelli, Takehiro Tomita, Felix Maximilian Von Haniel-Niethammer

Graduate Diploma in Case Management

Susan Margaret Burke, Paloma Coleman, Noreen Mary Cubis, Hubert John Driessen, Louise Marie Duncombe, Garrick Georgeson, Judith Grant, Fiona Jean Gray, Lesleyann MacGill, Jennifer Denise McInerney, Kelly Marie Membrey, Robyne Anne Renton, Heather Joy Story

Graduate Diploma in Child Health

Michelle Gaye Mann, Jacqueline Anne Petrie

Graduate Diploma in Drug Evaluation and Pharmaceutical Sciences

Libano Gregoria Dias, Brenda Jane Fox, Christopher Francis Gibb, Kalliopi Koniaras, Yan Chak Lam, Marisa Siciliano, Sian Tia

Graduate Diploma in Epidemiology and Biostatistics

Meropi Nicole Axarlis, Peter Sebastian Azzopardi, Dianne Joyce Beck, Mark Bradbeer, John Anthony Burgess, Cheng Siew Choo, Barry Dixon, Melissa Louise Graham, Sara Catherine Harrison, Allison Mary Hodge, Mark Erskine Howard, Kim Maree Jachno, Rebecca Anne Jenkinson, William Nigel Wilson Keenan, Katherine Leslie, Mehrnoush Lotfi-Miri, Chi Dzung Luu, Anna Carmel Madden, Anne Maree McIntosh, Francis Christopher Parker, Marinis Pirpiris, John Dominic Santamaria, Penelope Marie Sheehan, Maryanne Veronica Skeljo, Jo-Anne Leigh Stafford, Nora Elizabeth Straznicki, Hanna Danuta Wormald, Victoria Regina Wright

Graduate Diploma in Genetic Counselling

Jane Priscilla Adams, Ruth Rosemary Cowan, Mali Kate Elliott, Melissa Louise Graetz, Victoria Louise Hill, Alice Mary Jaques, Jacqueline Rachael Reti, Beverley Joy Warner

Graduate Diploma in Mental Health Sciences

Child, Adolescent and Family Mental Health
Janet Elizabeth Harris, Denise Anne McGregor, Stefanie Szlapa, Susanne Ursula Wells

Clinical Hypnosis

Samuel Harold Ginsberg

Cognitive Behavioural Therapy

Kwee Keat Lim, Gaye Elizabeth McDermott, Genevieve Margaret McMahon, Shane Francis Murphy

Community Mental Health
Kathy Roussos, Julie Hevey

Infant and Parent Mental Health
Judith Anne Coram, Patricia Anne Parker, Nicole Louise Robson, Katrina Jane Schlager, Karin Steinhoff, Georgia Lee Trachsel, Phyllis Ann Walsh, Helen Mary Williams, Sandra Helen Youren

Transcultural Mental Health

Clarita Kempooosit, Barbara Rice

Young People's Mental Health

Mario Michael Bergamin, Georgia Anne Bevan, Charmaine Maree Boswell, Rebecca Casey, David Kieran Collins, Gavin John Foster, Ross Jamieson, Lana Jane McAllister, Elizabeth Geraldine McNamara, Evelyn Royce Pettigrew, Kelvin James Robertson, Suzanne Isabel Robertson, Allan Sonneveld, Barbara Margaret Spark

Graduate Diploma in Psycho-Oncology

Amanda Jane Hebenton

Postgraduate Diploma in Palliative Medicine

Mark Christopher Beeby, Fabio Brecciaroli, Louise Michelle Elliott, Jocelyn Mary Keogh, Patricia Kerby, Ian Edward Millward, Catherina Elisabeth Maria Pronk, Carel David de Ruyter van Gend, Amanda Hope Walker, Sally Williams

Graduate Diploma in Women's Health

Lisa Michelle Dickins, Fay Veronica Thornton

Prizes and Awards 2001**Clara Myers Prize in Surgical Paediatrics**
Philip Lo**Edgar and Mabel Coles Prize in Obstetrics**
Amy Gray**EH Embley Prize in Anaesthetics**
Gabriel Snyder**Howard E Williams Prize in Paediatrics**
Sant-Rayn Pasricha**Jamieson Prize in Clinical Medicine**
Amy Gray**John Cade Memorial Medal in Clinical Psychiatry**
Sant-Rayn Pasricha**Keith Levi Memorial Scholarship in Medicine**
Sant-Rayn Pasricha**The NOVARTIS Prize**
Sant-Rayn Pasricha**The Pharmacia Award in Clinical Pharmacology and Therapeutics**
Sant-Rayn Pasricha**FINAL YEAR****The Alfred Edward Rowden White Prize in Clinical Obstetrics**
Sant-Rayn Pasricha**AOA (Vic) Orthopaedic Prize**
Vanessa Clifford**Australian Medical Association Prize**
Sant-Rayn Pasricha**Beaney Scholarship in Surgery**
Cherry Koh

Prize in Clinical Gynaecology

Jwu Jin Khong

Proxime Accessit Prize in Surgery

Jwu Jin Khong

Leonie Ross

RACGP Prize in Community Medicine

Neil Israelsohn

Robert Gartly Healy Prize in Medicine

Brett Manley

Gabriel Snyder

Robert Gartly Healy Prize in Surgery

Cherry Koh

Robert Gartly Healy Prize in Obstetrics

Peik Fei Yau

Rowden-White Prize

Sant-Rayn Pasricha

Sir Albert Coates Prize in Infectious Diseases

Jessica Kneebone

FIFTH YEAR*Crawford Mollison Prize in Forensic Medicine*

Joseph Doyle

The Fulton Scholarship

Sameer Jatkar

General Practice and Community Medicine Prize

Mervyn Ferdinands

Ian Johnston Prize in Reproductive Medicine/Biology

Cilla Raby

The John Adey Prize in Psychiatry

Shaun Xavier Ju Min Chan

The Kate Campbell Prize in Neo-Natal Paediatrics

Jonathan Golshevsky

The Max Kohane Prize

Amy Crosthwaite

The Vernon Collins Prize in Paediatrics

Bruce Campbell

FOURTH YEAR*The Harold Attwood Prize in Pathology*

Tomos Walters

Prize in Geriatric Medicine

Piers Blombery

The Manu Thomas Prize

Andris Ellims

Robert Yee Prize

Alexander Incani

FIRST, SECOND AND THIRD YEAR

The conditions under which the prizes for students in these years were originally awarded no longer exist under the new curriculum. The School of Medicine is still untangling the legislative changes that must be made to ensure the original intentions underlying the prizes are maintained. Announcements of these prizes will be made in the next issue of *Chiron*.

Dean's Honours List 2001**FIRST YEAR**

Yvette Bassin
 Katherine Buzzard
 Robert Commons
 Eric Ee
 Rominder Grover
 Matthew Hong
 Vivian Nguyen
 Lucy Ralston
 Anne Trinh
 Grace Walpole
 Rory Walsh
 Bernadette White
 Wen Yee Yau

SECOND YEAR

Andrew Hardley
 Angus Husband
 Joseph Isac
 Yu Xiang Kong
 Katherine Lowe
 Lucy Modra
 Om Narayan
 Ching Hui Ng
 Matthew Pitman
 Anna Takacs
 Stephanie Tang

THIRD YEAR

The 2001 third year medical students were the first cohort to undertake the Advanced Medical Science year-during the last six months of 2001 and the first six months of 2002. These students, therefore, could not be assessed on this part of their course until June 2002 and results were not available at the time of going to print.

FOURTH YEAR

Shalini Amukotua
 Laurel Bennett
 Piers Blombery
 Andris Ellims
 Alexander Incani
 David Januszewicz
 Sarah Kamel
 Rachael Lloyd
 Naseem Mirbagheri
 Meena Mittal
 Arthur Nasis
 Jennifer Neil
 Laina Sheers
 Gemma Strickland
 Philip Thompson
 Tomas Walters

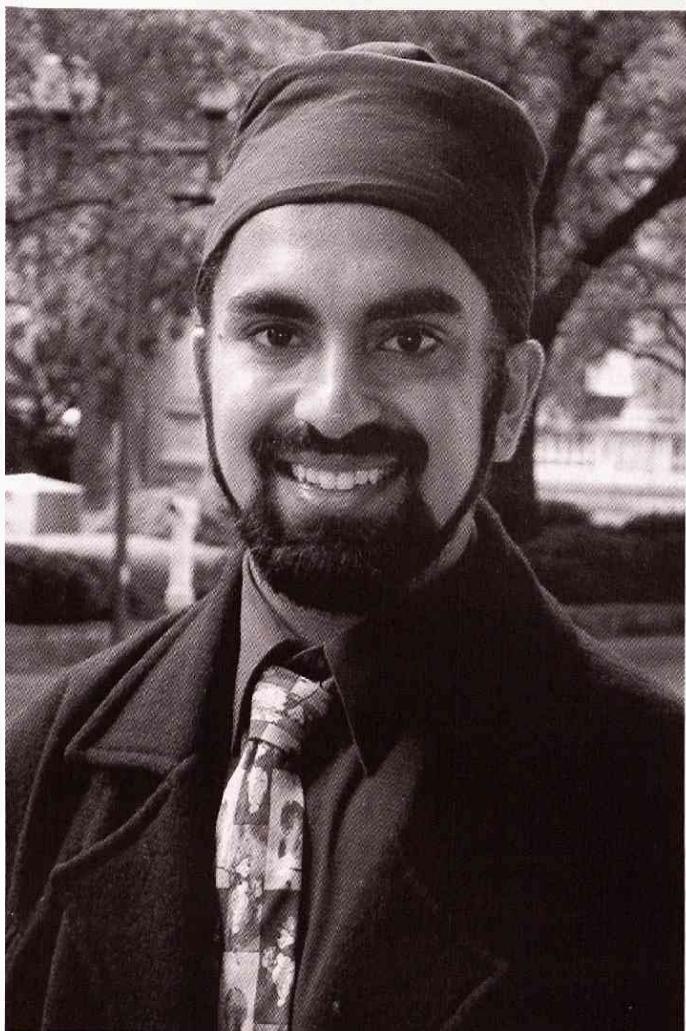
FIFTH YEAR

Thomas Barber
 Bruce Campbell
 Katherine Chen
 Amy Crosthwaite
 Eli Dabscheck
 Susi Fox
 Jonathon Golshevsky
 Victoria Greenwood
 Jessica Howell
 Sameer Jatkar
 Chatura Jayasekera
 Daniel McKay
 Fiona Nelson
 Gene-Siew Ngian
 Yee Jen Tai
 Fiona Wilde
 Beverley Woon

FINAL YEAR

Naomi Anderson
 Sarah Foster
 Katherine Gibney
 Amy Gray
 Neil Israelsohn
 Brett Manley
 Sant-Rayn Pasricha
 Leonie Ross
 Gabriel Snyder
 Jillian Tomlinson
 Carley Vuillermin
 Peik Fei Yau

Final Year Top Student 2001



SANT-RAYN PASRICA (Photo Paul Richiardi)

SANT-RAYN PASRICA was the top student in 2001. He was awarded a first class honours MB BS degree, the Australian Medical Association Prize, The NOVARTIS Prize and the Rowden-White Prize. Sant-Rayn also gained first class honours

in medicine and in surgery, and won the Keith Levi Memorial Scholarship in Medicine, the Pharmacia Award in Clinical Pharmacology, the Alfred Edward Rowden White Prize in Clinical Obstetrics, the Howard E Williams Prize in Paediatrics, and the John Cade Memorial Medal in Clinical Psychiatry, as well as the Royal Australasian College of Ophthalmologists Prize.

Sant-Rayn was born in Melbourne and educated at Scotch College, where he served his time in the cadet corps and on the hockey field, and developed a wide range of academic interests. Though both parents are lawyers, his father having graduated in London and his mother having studied law in Melbourne as a mature student, Santa and his sister Naanki, who studies speech pathology at La Trobe University, both decided that a career in healthcare appealed more than the cut and thrust of legal practice.

Entering the University of Melbourne in 1996, Santa has been an exceptional student, renowned not only for his academic success, achieved with apparent ease, but for his social skills, enthusiasm, and eclectic interests. These led to his three years as acoustic guitarist and singer with the rock band 'The Biggest Joke', and to his involvement in developing SWOT, a student initiative providing pre-VCE tutoring for disadvantaged high school children. A further initiative, which Sant-Rayn developed with Dr Catie Fleming, was the introduction of an interactive PBL style teaching session on adolescent sexual issues for Faculty of Education students, which was very successful.

During his clinical years at St Vincent's Hospital & Geelong Hospital Clinical School, Sant-Rayn demonstrated his strong sense of vocation and clinical aptitude. He continued to 'make friends and influence people'. A high spot for him was probably his elective experience in India, highlighted by the festival of Pongal during which workmen revered their tools (Santa wondered if perhaps a doctor should be revering his stethoscope), but the highlight for many of his classmates was his witty, erudite speech at the valedictory dinner.

Sant-Rayn has taken up an internship at St Vincent's Hospital, and is interested in a career in a medical specialty, maybe haematology or paediatrics.

Jacqueline Walters

St Vincent's Hospital Clinical School

ROBERT L SIMPSON MEMORIAL PRIZES 2001/2002

The Robert L Simpson (MB BS 1977) Memorial Fund was established after Robert Simpson's death in 1994. The fund supports students undertaking elective attachments in public health and also occasional memorial lectures.

Three prizes were awarded to students for 2001/2002: to Fiona Wilde, Susi Fox and Christine Ho. Fiona spent her elective in Provincial Hospital Kavieng, New Ireland Province, Papua New Guinea studying the public health

aspect of health care delivery in small geographically isolated communities. Susi spent her elective at Groote Eylande in the Northern Territory with the Aboriginal Medical Service as she hopes to work in a remote indigenous community after graduating. Christine travelled to China where she joined a public health venture commissioned by the Xishuangbanna prefecture in a village doctor training program.



Minutes of the UMMS Annual General Meeting 2001

The annual general meeting of the University of Melbourne Medical Society (UMMS) was held at 7.00pm on Tuesday 26 June 2001, in the Sunderland Lecture Theatre, Medical Building, the University of Melbourne. The meeting followed the Dean's Lecture entitled *Diabetic complications: more than just sugar*. This was delivered by Mark Cooper, Professor of Medicine, Department of Medicine, Austin and Repatriation Medical Centre.

1. Minutes of the Annual General Meeting 2000

The minutes of the 2000 annual general meeting, circulated at the meeting, were adopted as a fair record of proceedings.

2. Chairperson's Report

Graduates responded positively to the introduction of free UMMS membership in 2000.

Thank you to members who have generously supported School of Medicine initiatives through donations made with their UMMS membership and through the university annual appeal. Total donations from medical graduates in 2000 were \$56 113. These funds are supporting rural health training, clinical training, medical research, student prizes and student financial aid.

Members received an outstanding edition of the UMMS journal, *Chiron*, in 2001. Congratulations to the editors, Ms Liz Brentnall, Dr Janet McCalman and Linda Richardson, for producing such a high quality publication.

The School of Medicine and UMMS would like to record special appreciation and thanks to the Medical Defence Association of Victoria for their continued generous support of *Chiron*.

Members also received two editions of the UMMS newsletter, *The Melbourne PostCard*. Congratulations to the editors, Dr Jenny Conn and Ms Linda Richardson, for an excellent newsletter.

The UMMS Bachelor of Medical Science Prize for 1999 was awarded to David Sebastian Williams for his study entitled *A Single Amino Acid Polymorphism Influences the Repertoire of Peptides Presented by Subtypes of HLA-B4 that are Discriminated Between by Alloreactive Cytotoxic T Lymphocytes*.

There were four recipients of the Peter G Jones Elective Essay Prize in 2000. Prizes went to: Michael Ong, for his essay *Strongpela Man, Sik Pikanini (Strong Man, Sick Child)*, Anthony Clough, for his essay *Home, Horror and HIV*; Kerryn Gijsbers, for her essay *Changing Perspectives on the World* and Elif Ekinci for her essay *Where East Meets West*. Michael Ong and Elif Ekinci's essays are published in the 2001 issue of *Chiron*.

The annual UMMS Lecture was delivered by Professor Emeritus Sir Gustav Nossal AC, CBE, entitled *Millennial Challenges in Aboriginal Reconciliation and Global Health*. The superb lecture was very well attended and has been published in this year's *Chiron*.

The Dean's Lecture Series continued successfully in 2000 and included the annual seminar entitled: *Who owns your body? An ethics committee in action*, convened by Professor Graham Brown. The series concluded with the 36th Halford Oration given by Professor Fiona Stanley AC, Director, TVW Telethon Institute for Child Health Research, entitled *The Changing Face of Epidemiology*. Reports of both are published in the 2001 issue of *Chiron*.

Members were reminded of the final presentations in the Dean's Lecture Series for this year, which is the ethics seminar on Friday 27 July—*Ethics of International Research and Clinical Practice*, and the 21st Mathison Lecture on Tuesday 7 August to be given by Professor Bert Sakmann entitled: *The Eloquent Cerebral Cortex*.

The annual UMMS Lecture will be held later in the year, members will receive details of this in the October edition of *The Melbourne PostCard*.

Membership of UMMS at the end of 2000 was 2176.

3. Financial Report

The financial report for the twelve months ending 31 December 2000 was circulated. It recorded a deficit of \$43 905 compared to a surplus of \$9627 in the previous year.

The budget balance at the end of 2000 was \$42 548. A motion to accept the financial report was carried.

4. Election of Committee 2001-2004

Nominations for the election of six members of the executive committee of UMMS closed on Tuesday 19 June 2001. The six elected members of the UMMS executive committee were eligible for reappointment and under section 7.3 of the constitution were proposed for re-election. They are: Dr Lorraine Baker, Dr Thomas Kay, Dr Andrew Rothfield, Dr David Westmore, Mr Michael Wilson and Dr Barbara Goss. No further nominations were received. A motion to accept re-election of these members was carried.

There being no further business, the meeting closed at 7.15pm.

UNIVERSITY OF MELBOURNE MEDICAL SOCIETY (UMMS) MEMBERSHIP

The University of Melbourne Medical Society was founded in 1982 to promote communication between the School of Medicine, its staff and its graduates, and to promote excellence in medical education and research and in the medical profession. The society provides medical graduates with an opportunity for active, continuing links with the School of Medicine and the university. It is also a means for graduates to stay in touch with former classmates.

Benefits of UMMS Membership

Members are kept informed of the activities of the medical school and fellow graduates around the world through *Chiron*, the society's annual journal, and *The Melbourne PostCard*, our biannual newsletter. Members are also sent advance invitations to the Dean's Lecture Series, the annual medical ethics seminar and the society's annual lecture and function. Membership of UMMS will also ensure you receive invitations to reunions of your graduate year.

The School of Medicine has developed important teaching and learning initiatives to maintain the high quality and value of its medical degrees. UMMS members have opportunities to support these initiatives in areas such as clinical training, rural health programs, medical student financial aid, student prizes and medical research.

Membership of UMMS is free and renewable annually.

For further information please contact:

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School of Medicine
The University of Melbourne, VICTORIA, 3010
Telephone: (+61 3) 8344 5888
Facsimile: (+61 3) 9347 7084
Email: umms-medicine@unimelb.edu.au
Web site:
<http://www.medfac.unimelb.edu.au/med/UMMS.asp>

UMMS 2000 BMedSc Prize

KATHERINE BEVERLEY GIBNEY

*For her study entitled:
Acute Otitis Media in Rural and Remote Aboriginal Children*

Katherine Gibney's thesis describes the clinical course of acute otitis media (AOM) in Australian Aboriginal children living in a remote community. The prevalence of chronic otitis media in this population is among the highest reported in the world, however, the clinical course of AOM in this population had not previously been studied.

A systematic review of randomised-controlled trials was conducted to establish the clinical outcomes of children with AOM who were not treated with antibiotics. All the identified studies involved children from low-risk populations. Persistent symptoms were reported in less than one-quarter of children at the end of the first week in all studies. In contrast, persistent otoscopic signs of AOM were reported in 8-83 per cent of children during the first week and 15-70 per cent in the second week after diagnosis. This dramatic difference in outcome for symptoms and signs of AOM has not been emphasised in previous systematic reviews and is particularly relevant to children in otitis prone communities where progression to chronic ear disease is common.

It has only recently been established that AOM occurs in Aboriginal infants at a very early age. Once an episode of otitis media was documented the middle ear of these infants rarely returned to an aerated state. Tympanic membrane perforation has been reported to occur frequently in association with AOM among Aboriginal children. The aim of the subsequent studies was to describe the clinical course of AOM in this population and determine whether AOM clinically resolved then recurred, or if it persisted despite prescription of antibiotic treatment.

A pilot study was undertaken in March and April 2000 on a paediatric ward of the Royal Darwin Hospital. Middle ears were examined using video-otoscopy and tympanometry. At study entry AOM was diagnosed in two-thirds of the thirty-two children enrolled. At that time only one-quarter had a diagnosis of AOM documented in their hospital records. If the study diagnosis is taken as the 'gold-standard', the specificity of a diagnosis of AOM documented in the hospital notes was excellent (100 per cent) but the sensitivity poor (39 per cent).

The principal study of this thesis was performed in May and June 2000 in a remote Aboriginal community north of Darwin. Thirty-one Aboriginal children less than eight years of age with a clinical diagnosis of AOM were enrolled. Children underwent regular review of symptoms and signs of AOM. Overall compliance with antibiotics during the study was low, with mean weekly compliance ranging between 30 and 60 per cent.

The results of this study clearly demonstrated that AOM is prevalent amongst young Aboriginal children living in a remote community. The clinical features of AOM resembled those reported in non-Aboriginal children, however, perforation of the tympanic membrane was more common and otalgia less common at the time of AOM diagnosis in Aboriginal children. Otoscopic signs of AOM persisted into week four in one-quarter of children in this study. This is longer than has been reported in low-risk populations. Otorrhoea, bilateral AOM and otalgia at study entry were all associated with higher rates of persistent disease at the end of weeks one and two. Isolation of penicillin non-susceptible *Streptococcus pneumoniae* (PNSSP) and isolation of all three otitis media bacterial pathogens (*Streptococcus pneumoniae*, non-typable *Haeomophilus influenzae* and *Moraxella catarrhalis*) from the nasopharynx were associated with lower rates of persistent AOM on the day of specimen collection. The level of compliance with antibiotic treatment did not have a significant impact on the rate of clinical improvement, however, an increase in the rates of

carriage of penicillin non-susceptible *Streptococcus pneumoniae* was seen in the first two weeks of this study. Progression of AOM to chronic suppurative otitis media was reported and is of primary concern in this otitis prone population where the morbidity of chronic ear disease remains extremely high.

2002 REUNIONS

69th Year of 1933	50th Year of 1952
18 September	9 & 10 November
Lyceum Club	Australia Club
Spot Turnbull	Hugh Hadley
(+61 3) 9822 7727	(+61 3) 9866 1777
65th Year of 1937	45th Year of 1957
May/June	Gabriel Kune
Jim Peters	(+61 3) 9824 8691
(+61 3) 9822 5556	
62nd Year of 1940	40th Year of 1962
18 November	22 & 24 March
The Melbourne Club	College of Anaesthetists
John Bignell	Ian Rechtman
(+61 3) 9817 2268	(+61 3) 9527 4515
61st Year of 1941	35th Year of 1967
20 September	David Barraclough
University House	(+61 3) 9836 6669
James Guest	
(+61 3) 9347 3852	
60th Year of 1942	30th Year of 1972
John Tucker	Christopher Buckley
(+61 3) 5254 1490	(+61 3) 9417 1011
57th Year of 1945	25th Year of 1977
13 March	Richard Smith
Melbourne Cricket Ground	(+61 3) 5729 1925
Nate Myers	
(+61 3) 9576 2176	
55th Year of 1947	20th Year of 1982
12 October	Nick Gelber
The Melbourne Club	(+61 3) 9417 5788
R Webster	Jeremy Ryan
(+61 3) 9387 6681	(+61 3) 9591 0486
	12th Year of 1990
	Mandy Favilla
	(+61 3) 9836 0027

Medical Graduate Reunion Assistance

The University of Melbourne Medical Society office can assist medical graduates with reunions. We can publish information about reunions in *Chiron* and in *The Melbourne PostCard*. We can obtain, on your behalf, a list of graduates from your year and sets of labels from the alumni office. We can also advise you on alternatives you may wish to explore regarding university venues.

Contact the UMMS office:
 c/- School of Medicine
 The University of Melbourne
 Victoria, 3010, AUSTRALIA
 Tel (+61 3) 8344 5888, Facsimile (+61 3) 9347 7084
 Email: umms-medicine@unimelb.edu.au
 Web page:
<http://www.medfac.unimelb.edu.au/med/UMMS.asp>

2001 REUNIONS

MB BS 1933

Sixty-Eight Years Reunion

LYCEUM CLUB, 18 SEPTEMBER 2001

From Spot Turnbull—Of the 119 who commenced the medical course together, there were only seven alive at the time of the reunion: Campbell Duncan, Frank Ebell, Lorna Lloyd-Green, Dorothy Sinclair, Kendel Starke, William Holdsworth and myself. Only Lorna and I attended the luncheon and both expressed the hope that we would be present at our next reunion in 2002.



LORNA LLOYD-GREEN
AND SPOT TURNBULL
AT THEIR SIXTY-EIGHT YEARS
REUNION

MB BS 1940

Sixty-One Years Reunion

MELBOURNE CLUB, 26 NOVEMBER 2001

From John Bignell—A reunion of the MB BS graduates of 1940 was held at the Melbourne Club on 26 November 2001. The twelve graduates present were: John L Bignell, Kenneth F Brennan, Kenneth C Davidson, John RF England, Donald Fleming, Howard Hoban, Sheila M Lusted (Barr), Norrene M Nicholson (Findeison), Gladys W Simpson (Morris), EE Spring, Murray Verso and Jean I White.

Apologies were received from AFCG Christie, Peter H Davis, Noel deGaris, Rachel MF Farrer (Mechan), Harry H Jackson, Samuel D Mecoles, Lloyd O Morgan, Roy F Phillips, Albert E Piper, and Ronald L Sleeman.

Talk lasted well after the meal had finished and the request was made for a sixty-two years reunion in 2002!

Rush, Kurt Schwartz, Michael Shoobridge, Jack Swann, Keith Torode, Gordon Trinca.

Apologies were received from: Howard Coats, Jack Critchley, John Farrer, Jim Gardiner, Jenny Gardiner, Harold Grinblat, Peter Harper, Mary Levenson (Bennett), Iris Leber (Solomon), Jack Little, Walter Lowen, Bert McCloskey, Luke Murphy, George Pestell, Eric Taft, Tom Walsh, Stathy Zavetchanos,

Following a few words of welcome and thanks to Don Cordner for his help and cooperation a minute's silence was held for our recently departed colleague, Harry Cumming, and Nate Myers read the tribute from his wife, Eve, which read: 'You were my lover, my rock, my inspiration. Sleep sweetly, at last'.

The evening concluded at 9.30pm, prior to which there was some discussion regarding the frequency of such reunions and whether they should be luncheon or evening functions. The consensus was that they should be evening functions and that we should meet again in the year 2002.

All further enquiries regarding future meetings can be directed to Nate Myers at 165 Finch Street, Glen Iris, 3146, telephone (+61 3) 9567 2176, fax (+61 3) 9509 8930.

MB BS 1945

Fifty-Six Years Reunion

MELBOURNE CRICKET CLUB, 5 APRIL 2001

From Nate Myers—On Monday 5 March 1945 the following notice appeared:

The University of Melbourne
Conferring of Degrees
Monday March 5th, 1945
Bachelor of Medicine (1862)
and Bachelor of Surgery (1879)

On Thursday 5 April 2001 the reunion marking fifty-six years following this graduation was held. Once again, we met in the committee room of the Melbourne Cricket Club as a result of the auspices of Don Cordner, a past-president of the club.

The reunion was arranged to commence at 6pm for 6.45pm and at 6.45pm all present were invited to sit down at table for dinner. Name places were not arranged so that those present could move around during the course of the meal. This was done on three occasions to enable colleagues to spend more time with one another.

The following were present: Tom Antonie, Paddy Barrett, Don Cordner, Jim de Crespigny, Dermot Foster, Ross Hayes, Don Hewson, Joan Hosking (Mowlam), Paul Jeffrey, Jim Keipert, Ian Mackay, Nate Myers, Chan Piercy, Des Prentice, Paul Rowan, Don

MB BS 1946

Fifty-Five Years Reunion

MELBOURNE CRICKET CLUB, 11 APRIL 2001

From John Snell—On 11 April 2001 the fifty-five years reunion of the graduates of 1946 took place in the committee room of the Melbourne Cricket Club. Of a total of ninety students who graduated MB BS our numbers were down to twenty-six. We had thirty-seven attending our last reunion in 1996. There were no special or formal speeches but much reminiscing was done (one of the few privileges of seniority) during an excellent lunch and a great time was had by all. It was decided that we would repeat the exercise in two years time instead of five as it was considered we might be too ancient by then.

The reunion was attended by: LG Apted (Hewitt), Christopher Bruce Bailey, Brian Barraclough, Ruth Birrell (Williams), Allan Barrie Connard, Joan Cossar, William Grant Doig, Nicholas Talbot Hamilton, JK Henderson, Kevin William Hinrichsen, Francis Xavier Garvan Hurley, Sheila Hyland, John Edward Dennis Lane, Mary Lane, Dennis William Maginn, Ian Hamilton McDonald, Richmond Gordon Nell, Neville Rothfield, Geoffrey Richard Serpell, Maurice Henry Slomim, J Sloss (Proud), JA Snell, Cecily F Statham, Alexander Wynne Venables, Charles Russell Wain, R Withers.

**MB BS 1943
Fifty-Eight Years Reunion**

LEONDA, HAWTHORN, 13 MARCH 2001

From Bill Swaney—The fifty-eight years reunion of the 1943 medical graduates was held at Leonda, Hawthorn, on 13 March 2001.

In addition to the thirty listed by alumni, the following were also found: Percy Cowen (previously Cohen), Michael Shaw, Margo Sussex and Quentin Whitehead. Of this number, twenty-five graduates accepted and were accompanied by thirteen wives or companions. Apologies were received

from ten graduates.

The occasion appeared to be a great success. We did not have an official speaker on this occasion, and none of the graduates wanted to say anything.

Sandy Ferguson acted as the master of ceremonies and Bill Spring gave the Grace.

The assembly decided that we should hold the next reunion in 2003, which will be the sixtieth year of graduation.



MB BS 1943 FIFTY-EIGHT YEARS REUNION

Back Row L-R: ZETTIE PRYDE, CARL OSTBERG, PETER FOX, JOHN PERRY, PERCY COWEN, BILL SPRING, OLIVE LOGAN, BILL SWANEY.
Middle Row L-R: KEN HOWSAM, MARIE COCKBILL, DULCIE RAYMENT, DAVID COWLING, PETER READ, BETTY SPINKS, KEITH LIPSHUT, BOB SELLWOOD.
Front Row L-R: MICHAEL SHAW, RUSSELL JONES, EFFIE DERAVIN, MARGOT SUSSEX, SANDY FERGUSON, WINSTON RICKARDS.
Present but too late for photograph: ALAN ROSENHAIN, PERCY BRETT, ALF BARDSEY.

**MB BS 1966
Thirty-Five Years Reunion**

AUSTRALIAN CLUB, 10 NOVEMBER 2001

From Stanley O'Loughlin—The MB BS 1966 medical graduates held their thirty-five years reunion on Saturday 10 November 2001. The day commenced with a seminar at the University of Melbourne conducted by Professor Richard Larkins who enlightened the graduates with respect to the new medical curriculum.

A reunion dinner was then held at the Australian Club attended by: Jill Bath (Campbell), Stewart Bath, Kevin Bendall, John Bongiorno, Maria Breen (Vice), Martin Brown, Mary Brown, Ivon Burns, Barbara Burrows, Harold Cashmore, Any Catona, Adrian Clifford, Alan Coates, Judy Constable, John Dickman, John Dowling, Doug Drufft, Tony Dwyer, Leon Fail, Peter Faull, Peter Field, Robert Fraser, Christopher Game, Neil Geddes, Noel Gorman, Peter Gray, Peter Greenberg, Philip Griffin, John Gurry, Geoff Gutteridge, Ronald Gwynne, Max Haverfield, Ian Henderson, John Hollaway, Graeme Jones, Kevin

Kane, Karolis Kazlauskas, Elaine Kazlauskas (Kermond), John King, Paul Kitchen, Helen Kouzmin, Peter Kuhlmann, Ruth Kuhlmann (Markovic), Richard Larkins, Barry Lauritz, Elizabeth Ley, Peter Loewy, Peter Loughnan, Mai Maddison, Robert Millard, Harry Mond, Tim Nash, Robert Nave, John Neil, Stan O'Loughlin, Daryl Page, Lois Parr, Geoffrey Patience, Viv Peterson, Andrew Roberts, David Robson, Bill Ryan, Ted Schutz, Colin Scott, Garry Sheehan, John Silver, John Stephens, Keith Stokes, Ron Suss, Eugenie Tuck, Bill Wilson, Daryl Wise.

Organising a Reunion Dinner?

University House on the campus of the University of Melbourne is the ideal venue.

The House is able to cater for reunion groups ranging in size from 30 to 250 guests.

We offer a variety of competitively priced menu packages to suit any occasion.

Please contact Erin Boromeo on 8344 5254 for menus, costs, a tour of the facilities and further information.

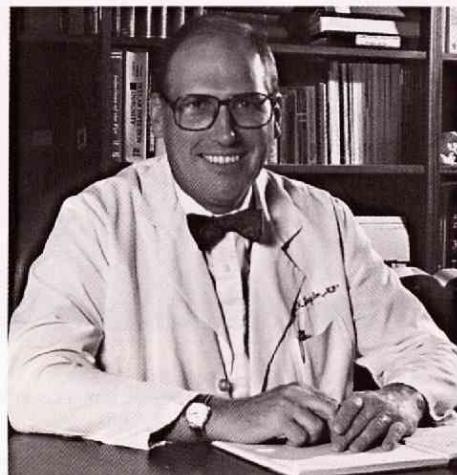
Emeritus Professor Donald Metcalf (Walter and Eliza Hall Institute of Medical Research), was awarded the 2001 Prime Minister's Prize for Science, Australia's premier award for excellence in science, in recognition of his discovery of colony stimulating factors (CSFs), the hormones that control white blood cell formation and resistance to infections. CSFs are now used throughout the world to accelerate the regrowth of blood cells after cancer treatments and bone marrow transplants.

Professor Graeme Clark (Head, Department of Otolaryngology), was named Senior Australian of the Year for 2001.

Professor John Hopper (School of Population Health), has been awarded the inaugural Woodward Medal in Science and Technology at the University of Melbourne.

The An@tomedia team—Dr Norman Eizenberg, Associate Professor Christopher Briggs, Ms Priscilla Barker and Dr Ivica Grkovic—(Department of Anatomy and Cell Biology), were awarded the 2001 Melbourne University Entrepreneurs' Challenge for their unique multimedia learning tool for teaching medical students about the anatomy of the human body.

Companions of the Order of Australia (AC)



HUGH TAYLOR, AC

Professor Hugh Taylor (BMedSc 1970, MB BS 1971, GradDip Ophthalmology 1975, MD 1979, Ringland Anderson Professor and Head, Department of Ophthalmology)—for service to medicine in the field of ophthalmology, particularly through renowned work in the prevention of river blindness in the third world, to academia through research and education related to the prevention of eye disease, and to the development of policy on eye health in indigenous communities.

In addition, Professor Taylor has been honoured with the American Academy of Ophthalmology's 2001 International Blindness Prevention Award and the Association for Research in Vision and Ophthalmology's Mildred Weisenfeld Award for 2002. He has also been made a member of the Academia Ophthalmologica Internationalis, a rare honour as lifelong membership is restricted to sixty ophthalmologists worldwide.

Professor Judith Ann Whitworth (MB BS 1967, MD 1974, PhD 1978, DSc 1992)—for service to the advancement of academic medicine and as a major contributor to research policy and medical research administration in Australia and internationally.

Officers of the Order of Australia (AO)

Professor Donald Stephen Esmore (MB BS 1973)—for service in the field of cardiothoracic surgery, particularly heart and lung transplant procedures, and for research into the development of artificial heart technology.

Professor Emeritus Charles Bridges-Webb (MB BS 1957)—for service to medicine, particularly in the field of primary care research and practice.

Professor Struan Keith Sutherland (MB BS 1960, MD 1980, DSc 1985) deceased—for service to science as a leading contributor to research in clinical toxicology and the biology of Australia's venomous creatures, and for the development of the funnel web spider antivenom.

Members of the Order of Australia (AM)

Dr Ronald Phillip Cleary (MB BS 1951) deceased—for service to medicine as a general practitioner, and to the community of Robinvale.

Associate Professor Elizabeth Mara Dax (MB BS 1971, MD 1990)—for service to medical research, particularly in the fields of public health, HIV/AIDS and drug addiction.

Dr William Brian Fleming (MB BS 1949, MS 1954)—for service to medicine, particularly oncology treatment as a head and neck surgeon, and as a medical administrator.

Dr David John Hill (MB BS 1964)—for service to the promotion of community health, particularly in the development of cancer awareness and prevention programs.

Dr William Chanen (MB BS 1951, Dip Gynaecol & Obstetrics 1956)—for service to medicine through contributions to the early detection, prevention and treatment of gynaecological cancer, particularly cervical cancer, and as an educator in colposcopy and the management of pre-cancerous diseases.

Dr Ian Maddocks (MB BS 1955, MD 1961)—for service to medicine, particularly as a pioneer in fostering the discipline of palliative care, as an educator in the field, and as a contributor to medical organisations concerned with the prevention of war.

Medal of the Order of Australia (OAM)

Dr John Kilburn Hall (MB BS 1958)—for service to the community, particularly through the Rotary Club of Oakleigh and the establishment of the Foundation for Homeless Youth.

Dr Solomon Rose (MB BS 1938)—for service to veterans and their families through the Victorian Association for Jewish Ex-Servicemen and Women and as Director of the Sir Edward Dunlop Medical Research Foundation.

Dr Peter John Ryan (MB BS 1948, MS 1953)—for service to medicine, particularly in the field of colorectal surgery, and in the prevention and management of road trauma.

Dr Karin Tiedemann (MB BS 1971)—for service to medicine, particularly in the field of paediatric oncology, through research, the establishment of a bone marrow transplant unit and the initiation of an umbilical cord blood bank for Victoria.

OBITUARIES

Charlotte M Anderson AM

BSc 1936, MSc 1937, MB BS 1945,
MD 1955, FRCP, FRACP, FACP, HFRCPCH

1915-2002



CHARLOTTE ANDERSON
(Photo courtesy of the
Royal Children's Hospital archives)

She worked as a research scientist at the Alfred Hospital's Medical Research Institute, later the Baker Research Institute, before deciding on a career in medicine. After a distinguished undergraduate course, she graduated MB BS in 1945. She began a residency at the Royal Children's Hospital after a year spent at the Royal Melbourne Hospital.

Her destiny was to be in working for infants and children with intestinal and respiratory disorders, unravelling the mysteries of and developing better treatment for illnesses like coeliac disease, cystic fibrosis and forms of malabsorption. In the early 1950s, after moving to England, she did outstanding and characteristically meticulous clinical research at the Hospital for Sick Children in London and at the University of Birmingham. She returned to Melbourne and through her work at the Royal Children's Hospital and its Clinical Research Unit and Research Foundation, became the founder of paediatric gastroenterology in Australia, developing a strong international reputation for her work. She trained many postgraduate students and clinical researchers from Australia and abroad.

From 1968 to 1980 she was the Leonard Parsons Professor of Paediatrics and Child Health at the University of Birmingham, one of Britain's most prestigious professorships. During that time she was very active in British, European and international child health and paediatric research, areas to which she had contributed very strongly in previous years in Australia.

In 1997 Charlotte was appointed a Member in the General Division of the Order of Australia (AM) for service to medicine in paediatric gastroenterology and research into cystic fibrosis and coeliac disease. She was truly a pioneer in Australian paediatric research, clinical care and teaching.

The late Charlotte Anderson is a graduate of which your university and medical school can justifiably be proud.

Michael Gracey AO

Past President, International Paediatric Association
Professor of Aboriginal Health, Curtin University

John Douglas Hicks

MB BS 1936

1913-2001

JOHN DOUGLAS 'DOC' HICKS was born at Beeac in Victoria's Western District on 27 February 1913. Doug was a keen all-rounder at school: he was head of his house at Geelong College, a member of the first XI, played Aussie rules and held a scholarship in his final year.

At university he changed football codes and earned a half-blue in rugby—he attributed recurrent neck problems in later life to the tactic, which he perfected, of running full pelt at an opponent before making a last-second sideways leap.

In 1940, following postgraduate training at the Royal Melbourne Hospital, Hicks was appointed the first pathologist to Prince Henry's Hospital—a part-time position. Later that year he was appointed King George V Research Scholar at the Melbourne (later Royal) Women's Hospital, under Hans Bettiger.

His war service in the Australian Army Medical Corps included a period in Papua New Guinea, where he was pathologist at the 2/11 AGH in Lae. After demobilisation in 1946 he was appointed senior lecturer in pathology at the University of Sydney, but returned the following year to Prince Henry's Hospital in Melbourne as full-time pathologist. In 1951 he crossed the Yarra to succeed ESJ King as pathologist at the Royal Melbourne Hospital, after King moved to the Melbourne University Chair in Pathology. King was a hard act to follow but Hicks proved a worthy successor: a painstaking morbid anatomist, he gathered a wealth of experience and expertise.

'Doc' was a classic example of the breed of Australian hospital pathologist that emerged in the mid-twentieth century: men and women whose training and practice were wholly laboratory-oriented. Many earlier pathologists had trained as clinical specialists but subsequently devoted increasing portions of their time to pathology. Doug was a little unusual in that his training and early specialist career were entirely Australia-based at a time when it was usual for young specialists in all fields to spend time gaining overseas experience. The presence of a young family and separation during the war years may have influenced his decisions in this area.

In the late sixties he spent a period of study leave in the Walter and Eliza Hall Institute of Medical Research (WEHI), researching experimental nephritis in rats. This gave play to his innovative bent in the development of a non-invasive technique for measuring blood pressure in laboratory rats. Doug's interest in 'mechanical' matters extended to other areas of his life such as the bowling green and his beloved E-type Jaguar cars. He was particularly interested in optics and was a skilled photographer. His microscopy was meticulous, no doubt helped by his association with Ernst Matthes, head of the university optical workshops.

It may be truly said that a hospital can only be as good as its pathology department will allow—a view which, I'm sure, the Doc supported. He was keen to embrace new methods which might enable quicker or more precise pathological diagnosis. Beyond the walls of his department he was a member of a small group of hospital pathologists who strove to ensure that adequate pathology services were available in peripheral and regional hospitals. He was unstinting in his support of clinical colleagues within the hospital and of his colleagues in other hospitals; the door of his room was rarely closed and he was seldom unavailable to review pathological material. His famously cluttered desk bore testimony to this; the astonishing thing was that he always seemed able to find the wanted slide or paper in just a few seconds!

Doug was a regular participant in the weekly forum of teaching hospital pathologists, at which difficult or unusual cases were discussed. For many years he attended the daily microprojection sessions in his department where all the diagnostic histopathology of the day was presented. This was of enormous benefit to his junior colleagues and trainees. In a wider context he was one of a number of pathologists who, in the 1960s, troubled by the then parlous state of coronial pathology services in Melbourne, considered it their duty to provide 'band-aid' support to those services which continued for twenty years or so.

No account of Doc's professional life would be complete without reference to his contribution to organised pathology. He was elected honorary secretary of the Australian Association of Clinical Pathologists in 1951. This body metamorphosed into the College of Pathologists of Australia and then the Royal College of Pathologists of Australasia. Doug served the college as examiner, state councillor, vice-president and was elected to the presidency in 1967-69.

After retiring from the Royal Melbourne Hospital in 1978 Hicks continued his association with WEHI as honorary pathologist for some years. He also conducted a private surgical pathology practice in nearby Parkville. In 1985 he underwent triple coronary artery grafting, the results of which allowed him to resume playing golf and tennis. Sadly, in 1994, he suffered a major stroke, which left him with severe paralysis and very impaired speech. Needing full-time nursing care he spent his last seven years in a nursing home until a further stroke led to his death in the early hours of 1 March, 2001.

Doc leaves a large number of specialists (clinicians and pathologists) who have benefited from working under and with him over a span of thirty years, and who are grateful for that association. To Mavis, widowed after forty-three years of marriage, and their children of whom he was so proud—John, Andrew and Mandy—we express our condolences and our appreciation of their husband and father as mentor, colleague and friend.

B M Wadham

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Adapted with permission



DOUGLAS HOCKING

(photo by John Aloysius Henderson)

Australia to adopt many new techniques, including the use of improved anti-coagulants enabling bank blood to be kept longer, the fractionation and the deep freezing of blood components. The pre-operative auto blood transfusion service he ran for over thirty years, which almost eliminated the risk of transfusion reactions and blood borne infections, and reduced the demand on volunteer blood donors, was so successful that most major elective orthopaedic operations could be performed in Geelong without resorting to donor blood transfusion. The bone bank established within

the blood bank became the first hospital-based bone bank to satisfy the very strict criteria of the Federal Therapeutic Goods Administration.

Doug also looked after patients outside the laboratory. He established medical oncology in the Geelong Hospital in 1970, managing this by himself for almost a decade, until the appointment of other specialist medical oncologists.

Doug was director of the Geelong Hospital Pathology Department from Vernon Plueckhahn's retirement in 1986 until 1991, when he was appointed clinical sub-dean of the St Vincent's and Geelong Hospitals' Clinical School. An ideal man for the job, his infectious enthusiasm inspired the many medical students who came through the school and he oversaw its development as an important teaching facility of the University of Melbourne. Doug was a natural teacher and mentor and his remarkable warmth and empathy with both patients and students will not be forgotten.

Doug also brought the same energy and enthusiasm to his other activities. He owned, trained and raced horses with some success, applying scientific methods and galloping up and down the beach near Barwon Heads in the early hours of the morning. Injuries did not deter him, he developed a pneumothorax when a female spectator stabbed him with a hat pin when playing football for the university, and was frequently thrown off horses. He built and sailed many small boats and during his last active season sailed a 'Flying 15' both in competition and with his grandchildren.

The Douglas Hocking Research Institute of the Geelong Hospital is a worthy tribute to his name.

Doug Hocking is survived by his wife Vivienne, and by his children, Peta and Justin, and their families. It has been a great pleasure and privilege to have known Doug for nearly sixty years.

WH Huffam

Douglas Roland Hocking

MB BS 1952, MRACP, FRACP, FRCPA

1927-2002

DOUGLAS HOCKING—a gentleman, teacher, scientist, physician and sportsman who approached everything with a broad smile, extraordinary energy and enthusiasm.

Douglas Hocking attended Geelong College where he was captain of the football team, an oarsman and a prefect. He then attended the University of Melbourne and graduated in medicine in 1952. Doug then married and spent time as a resident medical officer at the Mildura Base Hospital and as a general practitioner at Balranald in southern New South Wales before returning to the Heidelberg Repatriation Hospital for postgraduate training in haematology and medicine. Appointed to the Geelong Hospital as assistant pathologist, and haematologist in 1965, Doug became director of the Haematology Department and the Geelong Hospital Blood Bank in 1970.

The Geelong Hospital and the people of Geelong benefited greatly from Doug's many talents and innovations. Under his direction, the Geelong blood bank was one of the first in

Jeannine Paton

MB BS 1962, BSC 1957

1934-2001

JJENNY PATON COLLAPSED in the Brisbane airport on her way home from a conference and died shortly afterwards. Following her education at Presbyterian Ladies College, where she was school captain, Jenny commenced her medical course



JENNY PATON

in 1953. She graduated ten years later after the interruptions of marriage, an overseas stay, pregnancies and completion of a science degree. Soon after graduation she commenced work as a clinical assistant in various outpatient clinics at the Royal Melbourne Hospital. Her major commitment was to the diabetic clinic, which she served for thirty-five years until her death. She also joined the diabetic clinic at the Royal Children's Hospital, contributing to the care of children and adolescents for more than twenty-five years. In the early 1970s she became clinical supervisor of students at the Royal Melbourne Hospital, a position she held for six years. From 1982 to 1987 she was part-time staff medical officer at the Royal Children's Hospital whilst continuing her work in diabetes, and with a small but devoted private practice. In 1993, after having been a clinical tutor for many years, she was appointed senior lecturer in medicine to dental students at the University of Melbourne and held this position until her retirement in 2000.

Jenny's empathy and clinical skills were such that many children and their parents, as well as adults with diabetes, remember her with gratitude and affection. She contributed to several clinical research projects, most notably a study of the emotional and social effects of long-term insulin dependent diabetes. She was conscious of responsibility and meticulous in her attendance and care of patients, sometimes to the detriment of her own well-being.

The eldest daughter of Sir George Paton, Jenny grew up in the university, living first in the old Professors' Row and then in the vice-chancellor's residence. She had a critical and wide-ranging mind and cared for the traditions and well-being of the University of Melbourne, so that her university appointments meant a great deal to her. She was the inaugural honorary secretary to the University of Melbourne Medical Society committee.

Jenny was married twice, first to Kingsley Mills, whom she met as a medical student. They had five children but the marriage ended in divorce in 1977. In 1986 she married George Gunter (sic) but their happiness was cut short when he suffered a disastrous stroke in 1988. In addition to her family and medical work she was for many years a member of the Council of the Overseas Service Bureau.

An inveterate smoker, which did not help her chronic asthma, Jenny Paton was a vibrant, if sometimes loud, personality. Often the life of the party, with an outrageous statement and a ready laugh, she hid much of the disappointment and sadness she encountered in her life. Jeannine Paton will be remembered by her family and friends, her colleagues and devoted patients, not only for the loyalty and integrity of her friendship and care, but also for the many moments of, sometimes uproarious, laughter.

FID Martin

Benjamin Keith Rank Kt, CMG, KStJ

MB BS 1934, MS 1937,
DSC (HON, PUNJABI), FRCS, FRACS, LRCP, FACS,
FRCSE (HON), FRCS (HON)

1911-2002

A USTRALIA DAY 2002 marked the death of one of our most distinguished graduates.

After a broad and disciplined education at Heidelberg State School and Scotch College (where he was caned on his first day for running in a slippery corridor), Benjamin Rank entered the University of Melbourne in 1929 with a senior government scholarship and a major residential scholarship to Ormond College, where he spent six happy years. He took part enthusiastically in college life, including a 'Commencement Procession' tribute to 'Our Fallen Girls', where he

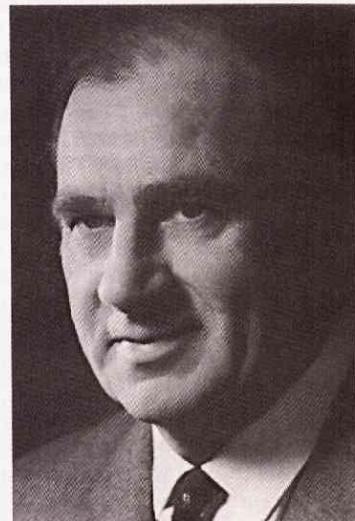
rode on a truck with a group dressed as ladies of ill-repute. This incurred the strong reproof of the master, DK Picken, but three of the group subsequently became knights of the realm.

In 1934, with honours and prizes, Rank graduated MB BS in the top echelon. Proceeding to the Melbourne Hospital in the year that it became 'Royal', he began two years residency. In his training, he clearly fell under the spells of Frederick Wood Jones, anatomist and orator, Sydney Sewell, a wise physician, and the dynamic and articulate surgeon, Alan Newton.

During his surgical maturation in London, early examples of reconstructive surgery with use of the tubed pedicle caught his imagination. He realised its potential and decided to make this his life's endeavour. He achieved apprenticeship to Gillies, McIndoe and Mowlem, especially the latter. In his early days with them, he was known as 'the foetus'. How that foetus developed as the doyen of plastic surgery in Australia has become legend.

Having been an officer in the Australian Army Medical Corps (2nd Cavalry Division) since student days, in 1940 he enlisted in the AIF and was sent to Egypt. He soon found himself major in charge of the faciomaxillary and plastic surgery unit of the 2/2nd AGH at El Qantara. In 1942 he was transferred to Australia to set up the plastic and maxillofacial unit at Heidelberg Military Hospital and promoted to lieutenant-colonel. After the war he began a private surgical practice at the Austin Hospital's Heidelberg House, which he continued for sixteen years.

In 1946 Rank became the first honorary plastic surgeon to the Royal Melbourne Hospital, but only after his insistence that a suitable supporting team—surgical, dental, prosthetic and secretarial—be appointed with him. This team became the leading unit in the land. Rank led it for twenty years, and a host of trainees came to gain experience in this expanding field of surgery. Injuries to the hand were a major interest of Rank's. As the recipient of a Carnegie Fellowship in 1947, he travelled in the USA studying recent developments and on return continued his push for primary repair. *Surgery of Repair as Applied to Hand Injuries* by Rank and Wakefield was published in 1953 and proved to be a classic. During the 1950s he was invited to



BENJAMIN RANK

demonstrate and lecture first in Singapore and Malaya, and later in India and Pakistan. These hectic visits bore much fruit. Many plastic surgeons from these countries came to Melbourne under the Colombo Plan and now head units in their respective homelands. As has been said, BK Rank made plastic surgery an instrument of foreign policy. His status as guru of plastic surgery was recognised with an honorary DSc (Punjabi) in 1970. In 1965 Rank became the first antipodean to be elected president of the British Association of Plastic Surgeons. On the home front he was a long-standing consultant to the Government of Tasmania and organised the formation of the Victorian Plastic Surgery Unit at Preston in 1964. He served the Peter MacCallum Cancer Institute for sixteen years, after early surgical retirement from his teaching hospital.

Space limitations permit only a short outline of his enormous contribution as a national and international surgical statesman. Fortunately, his gripping autobiographies—the professional *Heads and Hands* (1987), and the personal *The Family Story* (1982)—remedy this defect.

At the Royal Melbourne Hospital he was appointed chairman of the board of postgraduate education, medical advisor to the board of management on policy and development—he served the board as member and as vice-president—and was foundation chairman of the archives committee. His cessation of active involvement in 1982 completed fifty years service to his alma mater.

No-one has served the Royal Australasian College of Surgeons (RACS) with greater zeal. Appointed to council in 1955 he became Sim's Commonwealth Travelling Professor to Canada in 1958. He led the appeal for the extension of the college, completed in 1965, and presided over the college (1966–68). He was made an honorary fellow of the Canadian, Edinburgh and American surgical colleges, and membre d'honneur de la Société Francaise de Chirurgie Plastique et Réconstructive. He was the first Australian member of the select James IV Association of Surgeons, and presided over Interplast Australia and St John's Ambulance, Victoria.

Sir Benjamin was a master planner with amazing tenacity of purpose and intellectual stamina. He could be brusque to the point of frostiness and grumpiness, but was responsible for many acts of kindness and encouragement to junior colleagues. He read and wrote widely. He had a happy home life, and loved a party. His recreations included painting and gardening. He planted many trees and many surgical 'saplings' which have grown into big trees.

Privately cremated, he was sent off with a large memorial service at St Paul's Cathedral and a reception at the RACS, appropriately, as the hymnist wrote, 'pavilioned in splendor and girded with praise'.

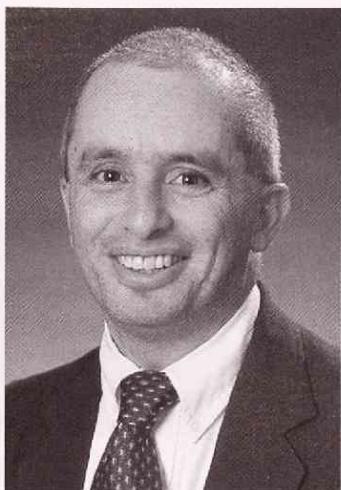
DG Macleish

Christopher Allen Silagy AO

MB BS 1983

1960-2001

AS MEDICAL STUDENTS twenty years ago, none of us would have predicted how successful Chris would be or how far his influence and admiration would stretch—and all in his short forty-one years of life. Our memories of our close friend as a medical student include discussing our first cases in the hospital 'caff', playing tennis on Saturday afternoons and of



CHRIS SILAGY

someone who smiled more broadly than most, laughed loudly and enjoyed life immensely. His hugely genuine and honest attitude to life was to characterise him throughout his life.

Chris achieved too much since medical school to fit into a short obituary. Some highlights of his career include: his appointment at thirty-three years of age as foundation professor of general practice and head of the Department of Evidence-Based Care and General Practice at Flinders University of South Australia;

his directorship of the Australasian Cochrane Centre; the Rose Hunt Medal from the Royal Australian College of General Practitioners for his exceptional contribution to Australian general practice; leading the international steering group of the Cochrane Collaboration from 1996–1998; his appointment as foundation chair of the National Institute of Clinical Studies, established by Michael Wooldridge in 2000; and professor of public health and foundation director of the Monash Institute of Health Services Research. Chris was also made an Officer in the Order of Australia (AO) for his service to medicine, particularly in the areas of research and education and in developments in the field of evidence-based medicine. He was the youngest scientist or healthcare professional to ever receive this award, and it was an award of which he was particularly proud.

Chris had an outstanding research record and became an internationally recognised figure in medical research. His major research interests centred on the application of clinical epidemiology to clinical practice and health care policy. He was the author of hundreds of journal articles and book chapters, and made over 100 invited presentations at major national and international conferences. His prodigious outpouring of medical writing was a legacy of his super human drive and determination.

Chris was also an inspirational lecturer, teacher and orator. He provided active support and guidance to large numbers of young medical researchers, healthcare practitioners and members of the general public. He was a great mentor to many of his colleagues and peers who came to rely on his extraordinary wisdom and insight, and who enjoyed the experience of working with a man of such remarkable talent.

He managed to combine all this activity with a strong and devoted commitment to his family. He was immensely proud of the achievements of Jane and his four young sons. Chris's face would light up whenever he recalled stories about Andrew, Michael, Nicholas and Ben. He often remarked on the strength and wonderful support he received from Jane. Chris was a devoted father and husband.

Chris Silagy was a truly great Australian. He is mourned by a great many people whose lives he touched, influenced and inspired in Australia and overseas. His vision and legacy will live on in many ways.

Chris is survived by his wife Jane, by his four sons, Andrew (11), Michael (9), Nicholas (8), and Benjamin (6), by his parents, Marian and Les, and by his brother, Geoffrey.

Christopher Fairley, Michael Kid
and Rowan Doig from the class of 1983

Struan Keith Sutherland AO

MB BS 1960, MD 1980, DSC 1985, FRACP, FRCPA,
FACTM

1936-2002

THE DOYEN OF Australian toxinology, Struan Sutherland, passed away in Melbourne after a long illness in January 2002. He will be remembered as a passionate physician-scientist as well as an inveterate advocate for the practical value of such research. Maintaining his indomitable larrikin nature and idiosyncratic sense of humour to the end, he prepared his own death notice:

Straun would like to inform his friends and acquaintances that he fell off his perch on Friday, January 11, 2002.

He had struggled with the effects of Striatal Nigral Degeneration, what he jokingly termed 'a posh form of Parkinson's disease', for much of the last decade. Thus has a remarkable Australian passed into the pantheon of our great physician-scientists.

Born in Neutral Bay, Sydney, in 1936, Struan grew up in Bendigo and graduated in medicine at the University of Melbourne in 1960. After a residency at the Royal Melbourne Hospital he spent four years as a surgeon lieutenant in the Australian Navy. His medical research career began in 1962 as a locum in the clinical research unit at the Walter and Eliza Hall Institute, under the guidance of Dr (later Sir) Ian Wood. This resulted in the first of more than 300 publications and may have assisted his appointment as a medical officer to the Commonwealth Serum Laboratories (CSL) in 1966. Soon thereafter he became the director of the new immunology research department.

The next sixteen years were to be the most productive of his professional life as Struan built up a venom research team reminiscent of the era of Charles Kellaway, an earlier pioneer of distinctively Australian venom research. Most famously he developed the lifesaving funnel-web spider antivenom, the pressure-immobilisation first aid technique for snakebite (also applicable to funnel-web spider bites) and the internationally unique snake venom detection kit. This resulted in a series of awards such as the Australian Medical Association Prize for Medical Research (1977), the James Cook Medal of the Royal Society of NSW (1984), the Medal for Outstanding Contribution to Tropical Medicine of the Australasian College of Tropical Medicine (1997), the Distinguished Fellow Medal of the Royal College of Pathologists of Australia (1999) and, posthumously, an Officer of the Order of Australia. During his career he also became a fellow of the colleges of physicians, pathologists and tropical medicine respectively. He attained both his higher degrees—MD and DSc—for his toxicological studies from this university. Perhaps more important to Struan was the rapid acceptance of his findings in the management of the victims of snake and spider bite.

The pressure-immobilisation technique, first described in *The Lancet* in 1979, has become the standard method of first aid for neurotoxic elapid snakebites through the world. However, its place in the early management of crotalid and viper bites, as well as that of necrotising elapids, remains controversial. Professor David Warrell of Oxford University, perhaps now the foremost clinical toxinologist in the world, recounted the place of Struan's technique in the history of snake bite treatment during his recent Harveian Oration ('To search and Study [sic] out the secret [sic] of Tropical Diseases by way of Experiment'. *The Lancet* 2001;358:1983-8). The improvement of the lot of the snake bitten in the tropical world remains a major challenge for the next generation of clinical toxinologists.

Struan's somewhat quixotic nature (reputations first, profits second) led to notorious clashes with senior CSL management



STRUAN SUTHERLAND
(photo James Braund)

in the early 1980s. Whilst these ultimately undermined his productivity he took advantage of the time to embark on another career as an author and public educator. Most important was his seminal textbook *Australian Animal Toxins* (Oxford University Press) and the more concise best-seller *Venomous Creatures of Australia* (Hyland House).

Other works included *Dangerous Australian Animals* (Hyland House) and *Take Care: Poisonous Australian Animals* (Hyland House). Struan also had a passion for gardening that stimulated him to write the other best-seller *Hydroponics for Everyone* (Hyland House).

Struan rejoined the

University of Melbourne in 1994, when he was appointed an associate professor in the Department of Pharmacology under Professor James Angus. This was precipitated by the privatisation of CSL and thence its cessation of sixty-five years of venom and antivenom research.

The Australian Venom Research Unit, begun with a seeding grant from CSL Limited and sustained by continuing grants from the Victorian Department of Human Services, has become a living memorial to the humanitarian imperative that ran through Struan's life. Even in death he strove to do more by asking that donations be made to the unit rather than sending flowers. More details of that life are available in his autobiography, *A Venomous Life* (Hyland House). He died as he lived—an inspiring Australian dedicated to the service of others.

Ken Winkel

Director, Australian Venom Research Unit
Department of Pharmacology

Michael Francis Addison Woodruff Kt

MB BS 1932, MD 1937, MD 1940, MS 1941,
DS 1962, FRCS (ENG & ED), FRCP (ED), FRACS,
FRS (ED & LOND)

1911-2001

MICHAEL FRANCIS ADDISON Woodruff, one of the University of Melbourne's most distinguished graduates, died on 10 March 2001, in Edinburgh.

He was born in London on 3 April 1911 and came to Australia at the age of two following the appointment of his father, Harold Woodruff, to the Chair of Veterinary Pathology at the University of Melbourne. Woodruff was educated at Trinity Grammar and at Wesley College before reading electrical engineering at the University of Melbourne. He graduated with first class honours in 1932, having also acquired a reputation as a fine oarsman and a distinguished organist, demonstrating a love of the water and of music, which lasted all his life. This was the time of the Great Depression, with few opportunities for engineers, so Woodruff decided to transfer to medicine. He graduated in 1937 then undertook surgical training at the Royal Melbourne Hospital, during which time he acquired the degrees of Doctor of Medicine and Master of Surgery.

After the outbreak of the Second World War, Woodruff joined the Australian Army Medical Corps, serving with the 10th



MICHAEL WOODRUFF

General Hospital in Malaysia. He was captured in 1942 and transferred to Changi in Singapore. During his more than three years in captivity, his major concern lay in overcoming dietary deficiencies, particularly vitamin deficiency, in his fellow prisoners of war, who subsisted largely on a diet of rice. Native grass was crushed in a make-shift machine of Woodruff's design to produce a 'grass soup', which protected those prepared to ingest it from a variety of diseases. This experience led to the Medical Research Council's *Special Report on Deficiency Diseases in Japanese Prison Camps*, published in 1951, which Woodruff co-authored with Dean Smith.

After release from Changi, Woodruff returned to Australia, meeting and marrying Hazel Ashby, an Adelaide botanical scientist, in 1946. They moved to the United Kingdom in 1947 to allow Woodruff to take up a position of tutor in surgery at Sheffield University. He was elected a fellow of the Royal College of Surgeons and in 1949 he moved to the University of Aberdeen as senior lecturer in surgery and consultant surgeon to both the Aberdeen Royal Infirmary and the Hospital for Sick Children. During this period he developed his intense interest in and commitment to transplantation immunology, which continued after his appointment to the Chair of Surgery at the University of Otago in Dunedin in 1952.

His next move was to the long established, but since renamed, Chair of Surgical Science at the University of Edinburgh in 1957. This was opportune, not only because Woodruff was destined to become one of the great surgeon-scientists, but also because he was then ideally placed to lead the development of organ transplantation in Europe.

He attracted an outstanding group of immunologists and geneticists to work with him in the Wilke Surgical Research Laboratory at the university and together they formed the Medical Research Council Research Group on Transplantation. In 1960 two seminal events occurred. Firstly, the publication of *Transplantation of Tissues and Organs*—a work of extraordinary breadth and depth which it was almost impossible to believe could be the work of one man—which remained the standard reference text for many years. Secondly, a kidney transplant between identical twin brothers—the first such procedure to be undertaken outside Boston. Within three years anti-rejection drugs, which allowed transplants from non-identical donors, became available and Woodruff again led the introduction of

such procedures in the United Kingdom. He was particularly active in the development of immunosuppressive agents and their trial in clinical practice. He designed the Nuffield Transplant Surgery Unit at the Western General Hospital, enabling recipients to be isolated to overcome the high rate of infection, the major side-effect of the drugs available at that time.

In addition to his professional skills, Woodruff provided strong leadership in addressing the vexed questions of ethics and scientific responsibility raised by the use of live donors and, later, cadaveric organ donation.

Recognition of his extraordinary contributions to the development of transplant surgery and his thoughtful leadership in the moral and ethical issues of transplantation came in the form of many honours. The University of Melbourne awarded him the degree of Doctor of Science in 1962; he was elected a fellow of the Royal Society in 1968, becoming a vice-president of that society in 1979; he was created a Knight Bachelor in 1969 and later became the president of the International Transplantation Society. He was elected to the council of the Royal College of Surgeons in Edinburgh, to the fellowship of the Royal Australasian College of Surgeons and to the Royal College of Physicians in Edinburgh. He became an honorary fellow of both the American College of Surgeons and the American Surgical Association, and an *associe étranger* of the French Academy of Surgeons—he was fluent in both written and spoken French and had strong associations with immunology in France. His treasured yacht, *Therapist*, was based in the south of France where he took his summer vacation for many years.

In later years, while maintaining his interest in transplantation, Woodruff became intensely interested in the immunological aspects of cancer, carrying out major studies on the use of immunostimulants in the treatment of tumours. After retiring from the by now retitled Chair of Surgery at the University of Edinburgh in 1976, he spent some time at the Walter and Eliza Hall Institute in Melbourne before returning to Edinburgh to continue his experimental work for a further fifteen years. His 1980 publication *Interaction of Cancer and Host* was another classic in the field and he continued to publish on scientific and ethical issues. His last book, his autobiography, published in 1997, was titled *Nothing Venture Nothing Win* [see *Chiron*, Vol4, No1, 1998, p64]. While his retirement was an active one in a professional sense, Woodruff still found time to pursue his lifelong interests in music, sailing and tennis until age began to slow even this strongest of men in the last two years of his life.

He is survived by Hazel, his wife and partner of nearly fifty-five years, and by their sons, Keith and Geoffrey, and a daughter, Margaret.

Gordon Clunie

UMMS RECORDS WITH REGRET THE PASSING OF...

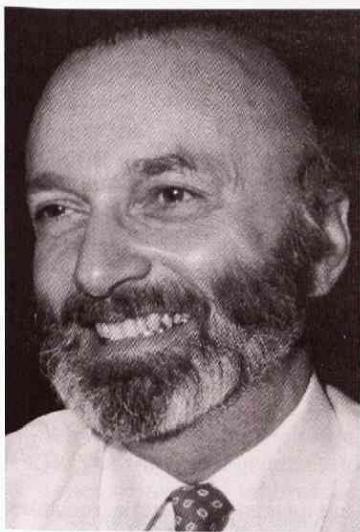
Ernest Aldred OAM, MB BS 1956
Thomas G Allen, MB BS 1928
Mervyn Barrett, MB BS 1941
John G Buls, MB BS 1968
John T Cahill OBE, MB BS 1940
Brian Clerahan, MB BS 1942
Brian Courtney, MB BS 1935
Harry G Cumming, MB BS 1946
Robert K Edwards, MB BS 1938
Nairne G Elder, MB BS 1941
Francis A Esson, MB BS 1958
Jenny Gardiner, MB BS 1945
Midred M Green, MB BS 1934

Ronald W Greville, MB BS 1950
David B Griffiths, MB BS 1956
Barry R Grove, MB BS 1949
Thomas Hasker, MB BS 1969
Ian C Heinz OBE, MB BS 1938
James G Hindhaugh, MB BS 1963
Maurice G Ingram, MB BS 1944
Lidia Kilvington, MB BS 1974
Leonard Langmore, MB BS 1935
Nancy Lewis, MB BS 1935
Patrick J Monahan, MB BS 1936
Kenneth N Morris, MB BS 1940
James P O'Sullivan, MB BS 1952

Peter J Paterson, MB BS 1960
Douglas B Pearce, MB BS 1942
Peter M Robertson, MB BS 1947
Ronald M Rome, MB BS 1934
Samuel Rose, MB BS 1947
Solomon Rose OAM, MB BS 1938
William M Rose, MB BS 1940
William A Self, MB BS 1952
William B Stafford, MB BS 1943
Edward G Strahan, MB BS 1939
Godfrey U Taylor, MB BS 1951
Alison B Vines, MB BS 1965

BEQUESTS AND MEMORIAL GIFTS

A NOT SO SECRET HISTORY



HAROLD S SYMONS

DR HAROLD SYMONS (1934-97) included in his will a bequest to the University of Melbourne for the purposes of research related to medicine. He also left to the university a collection of valuable medical history books, now housed in the Brownless Biomedical Library rare books collection.

Educated at Essendon High School prior to winning a scholarship to Scotch College, Harold Symons studied medicine at the University of Melbourne and graduated in 1957. He went on to become an outstanding thoracic and general physician in both

private practice and the public hospital system. He was inaugural director of the Asthma Foundation of Victoria and had a major role in the foundation's early development. He was an excellent teacher at the Royal Melbourne Hospital Clinical School and lecturer in medicine to the Dental Faculty of the University of Melbourne.

Of his many interests outside medicine, the main one was music. He was an accomplished pianist and organist and his appointment as organist at Holy Trinity Church, Kensington, in the 1950s helped him finance his medical studies. He sang in various choirs and he formed the Melbourne Consort, a talented group of singers who staged many successful performances. He built his own harpsichord, attended many orchestral, chamber music and operatic performances in Australia and internationally, and was regarded as a mine of musical information. His other great interests included cricket and football and, a keen sportsman himself, he enjoyed competitive tennis and skiing.

To all these fields of endeavour Harold Symons brought a gregarious nature and a good sense of humour. He was a generous person and often gave financial assistance to friends or to worthy causes. A very private man, he never spoke of these deeds and his generosity would only become known through indirect means.

Harold's premature death in 1997 was a great loss not only to his family and his many friends and patients, but also to the

wider community. His generous legacy to the University of Melbourne, however, has ensured that his influence continues in the fields of medicine and medical history, supporting programs of benefit to students, research and the wider community.

The Harold Stanley Symons Bequest for 2001-02 is dedicated to two projects designed to place the history of the Faculty of Medicine, Dentistry and Health Sciences and the Johnstone-Need Medical History Unit on the 'virtual map' of the world wide web.

The first project involves building a gateway into the Johnstone-Need unit. The gateway will include a history of the bequest and Dr JW Johnstone-Need, biographies of staff with current research and teaching and, most importantly, an introduction to the richness of the medical history collections in the university library and the rest of Melbourne—the various colleges and hospitals, the Public Record Office and the State Library. Melbourne is a world-class place to research the history of medicine, with a library collection better than Oxford (or so a visiting PhD student told us last year!). So that browsers can explore the collection, the website will be linked to the library's Innopac catalogue, with guides for subject searching. That means, if you want to see what the library has on British surgery in the second half of the nineteenth century, you can find out very quickly. In addition to increasing the university's international profile in the history of medicine this will provide a valuable resource for all those fascinated by the history of the healing arts and sciences.

The second project involves compiling a history of the faculty for a historical compendium on the web: narratives of departments, schools, clinical schools; biographies of staff and former students and, very importantly, multimedia historical modules for teaching and communicating the history of medicine. Many of these will be student projects from the Advanced Medical Science year: a history of the hip-replacement for example.

These two projects will connect with the Health and Medical History Online web page—an online catalogue currently under construction for the university's medical and dental museum collections. Through these projects, researchers into the history of medicine and the health sciences will have a wealth of information available to them.

Janet McCalman and Robin Orams

*With thanks to Mr John Symons, Dr Henry Hillman,
Dr Peter Greenberg and Dr Peter Sutherland*

BEQUEST AND MEMORIAL GIFT INFORMATION

If you would like information about establishing a memorial gift or making a bequest to the university, please contact Catherine Spencer at the Development Office, The University of Melbourne, Victoria, 3010. Telephone (+61 3) 8344 0896; email cmls@unimelb.edu.au. All enquiries are treated in strictest confidence.

Alumni in the USA, Mexico and the UK

If you are a resident of or have assets and tax obligations in the USA or Mexico, and are considering a gift or bequest to benefit the university, the University of Melbourne USA Foundation can assist with making such a gift tax effective.

The foundation is an incorporated not-for-profit body in the USA.

Contact: The Administrator, The University of Melbourne USA Foundation, 630 Mt Pleasant Road, Freeville New York 13068 USA. Telephone (+607) 277 8860.

The Friends of the University of Melbourne Charitable Trust is a registered charity in the United Kingdom and offers similar benefits for prospective supporters in that country.

Contact: The Trustee, The Friends of the University of Melbourne Charitable Trust, Swire House, 59 Buckingham Gate, London SW1E 6AJ United Kingdom. Telephone (+44 20) 7630 1075.

2001 UMMS LECTURE

15 November 2001

THE GENETICS DEBATE

Why Doctors Must be Heard

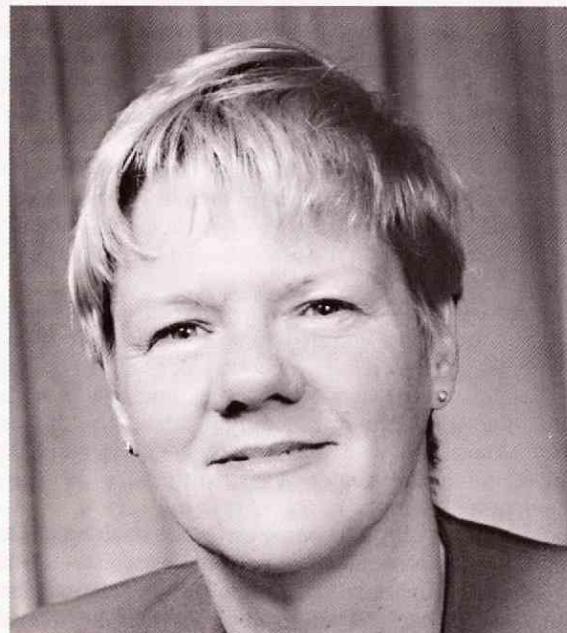
BY PROFESSOR LOANE SKENE

Professor of Law, Faculty of Law and Faculty of Medicine, Dentistry and Health Sciences, University of Melbourne

*Program Manager, Centre of Applied Philosophy and Public Ethics,
Charles Sturt University and University of Melbourne*

Deputy Director, Law Gene Centre, University of Tasmania and University of Melbourne

Chair, Australian Institute of Health, Law and Ethics



LOANE SKENE

DOCTORS SHOULD BE involved in the genetic regulation debate. Lawyers and the community need access to medical knowledge, experience and values when they are thinking about legislating on genetic testing and treatment. In the following three examples, I will show why this is important by explaining how the law may go off the track without medical input.

Therapeutic testing

Consider genetic testing in a diagnostic and therapeutic context. In the words of Dr Jim StJohn, a leading Melbourne specialist in colorectal cancer who has set up genetic registers for two of these cancers:¹ 'We treat *families* now, not individual patients'.² The relatively recent³ knowledge that many cancers have a substantial genetic element has changed diagnosis, treatment and follow-up care. In order to diagnose a person's genetic status for the colon cancer familial adenomatous polyposis, for example, doctors have to test a relative suffering from the condition in order to find the family mutation. Once the mutation has been found, other family members should be contacted and offered testing and counselling. Information from family members is then combined in the medical records and

families—and their members—are placed on genetic registers for each condition. The aim is family care, not individual privacy and control.

Another instance of the use of family information in caring for patients is the time-hallowed 'informal discussion' between doctors to obtain information about family members in order to advise a person of his or her genetic status. It has been common medical practice for doctors to tell one another on request the exact cause of death of a patient's relative, for example, or for that information to be provided to a doctor from a genetic register, without consent from the person concerned. This information is vital for checking a patient's own genetic risk, and for providing advice and prophylaxis. It is often more accessible and accurate than information coming from relatives themselves, who may be unwilling or unable to help. Families are often ill informed, incommunicative or dysfunctional. As Professor Graham Giles, Director of the Cancer Epidemiology Centre, Anti-Cancer Council of Victoria said in explaining the need for genetic registers: 'Families have black sheep, missing sheep and dead sheep'.⁴

The need for family information to be obtained and shared by doctors in providing genetic advice was recognised by the late Professor Richard Lovell AO, when he chaired a working party on these issues some years ago in Melbourne.⁵ More recently, Dr Kerry Breen, chair of the Australian Health Ethics Committee (AHEC), in launching an issues paper on the need for genetic privacy, published jointly by the Australian Law Reform Commission and AHEC, said: '[D]octors ... have long used family medical history to provide advice or make assessments about the future health of an individual'.⁶

Use of stored bodily material in research

It is not only in the therapeutic context that access to tissue and genetic information is vital, sometimes without consent from the person concerned. Equally important issues arise in relation to research. My second example of current dilemmas comes from a dental researcher who rang me about research he wants to do on enamel from extracted teeth stored at a dental hospital. The teeth had been removed during therapeutic procedures and the people were not consulted about the possibility that their teeth might be used in research. The human research ethics committee in the hospital was concerned about the teeth being used without consent.

Participation in profits of research involving one's bodily material

My third example comes from a medical researcher who has a substantial research grant with a pharmaceutical company to try to develop a diagnostic test for a particular cancer. He wants to test tissue removed for therapeutic purposes with the full

consent of the people concerned for its use in research. The human research ethics committee in his hospital asked whether the patients in the trial are entitled to a share of the profits, if the research is successful. University academics are all encouraged to seek commercial participation in their research in these straitened times, but the prospect of money—perhaps very substantial returns—raises new issues.

Note that the legal questions in the second and third examples have come from ethics committees. This is an indication that the ethical guidelines published by the National Health and Medical Research Council (NHMRC) are not, on their own, adequate to resolve problems concerning the use of human bodily material and genetic information. Ultimately, they are matters for the law. So what is the law and how can doctors help in its formation and revision?

What do you think the law—or ethical practice—should be?

What is your response to the above examples?

- Do you think that genetic information is different from other types of medical information and that different principles should be applied in deciding who should control it or have access to it?
- Do you think that doctors sometimes need to treat families, rather than individual patients?
- Do you think that stored human bodily material should sometimes be used in research without seeking consent from the people concerned, provided that their privacy is protected—and that people should be prepared to participate in research without the prospect of financial reward?

If yes, then the community and those who are developing new laws need to hear from you! I urge you to consider making a submission to the inquiry currently being undertaken by the Australian Law Reform Commission (ALRC) and the Australian Health Ethics Committee (AHEC) on *Protection of Human Genetic Information*. Let me explain why.

The current law and where it is headed: autonomy, individual rights and privacy

The current law on the relationship between doctor and patient is based on patient autonomy, individual rights and privacy. The common law of negligence and contract, for example, imposes duties on doctors in relation to their *patients*. Doctors must take reasonable care in treating their patients and keep all information about patients confidential. It is the patient's right to decide what medical procedures to have and to whom the patient's medical information will be disclosed. There is a limited and ill-defined exception to the general obligation of confidentiality if there is a real and imminent threat to the safety of an individual or the public, but unless disclosure is authorised by legislation, doctors must not disclose a patient's personal information. A lawyer in my graduate class in Law and Human Genetics recently responded to a doctor's account of informal medical information sharing, that she was 'gob-smacked' to hear of this practice! This is typical of legal attitudes and, without better information, it is likely to be the attitude of the wider community. It is these concerns that are driving the move towards greater regulation of genetic testing. In launching the ALRC-AHEC issues paper *Protection of Human Genetic Information*, Professor David Weisbrot, a lawyer and chair of the ALRC said that: '... it highlights concerns about the use of human genetic information in medical research and practice; tissue banks and genetic data bases; health administration, employment; insurance and superannuation; access to services and entitlements; law enforcement and evidence in court'.⁷ There is real concern in the community about the privacy of genetic information—and note that 'medical practice' appears first in Professor Weisbrot's list!

Already this concern has led to legislation that, in my view, raises potential problems for doctors. A spate of recent privacy legislation, both federal and state, places even greater emphasis on a person's right to personal privacy than the common law does.

Use of genetic information in diagnosis and treatment

Consider the *Health Records Act 2001* (Vic), which comes into effect in June 2002. The Act deals with 'personal information', which is defined specifically to include genetic information.⁸ The Act applies to 'organisations', both public and private, and the term 'organisation' includes individuals, like individual doctors.⁹ The Act states that: '... an organisation must not do an act, or engage in a practice, that is an interference with the privacy of an individual' (s 21). An act or practice is: '... an interference with the privacy of an individual' if it '... breaches ... a Health Privacy Principle ...' (s 18). Health Privacy Principle 1.1(a) states that: 'An organisation must not collect health information about an individual unless the information is necessary for one or more of its functions or activities and ... the individual has *consented*'.¹⁰ Health Privacy Principle 2.2(b) states that: 'An organisation must not use or disclose health information about an individual for a purpose ... other than the primary purpose for which [it] was collected unless ... the individual has *consented* to the use or disclosure'.¹¹ There is provision for disclosure to 'immediate family members', but only if the person concerned is incapable of consenting.¹² There is also provision for the Health Services Commissioner to prepare guidelines allowing for the use of information, where that is necessary, to provide a health service for an individual: HPP 2.2(e). In future, that provision may be interpreted to allow information to be used for genetic testing and treatment. But that is not apparent from its current wording.

Applying these provisions to the collection of information about family members to assist in the diagnosis of a familial mutation—or the establishment and validation of a family pedigree—one can see the problems that arise for the doctor. It will not be possible for the doctor¹³ to obtain information from sources other than the patient, such as the doctors of other relatives or a genetic register, without the consent of the person concerned. Nor will it be possible to disclose information about the patient to affected relatives for use in their own healthcare unless it is 'necessary to lessen or prevent a serious and imminent threat to [their] life, health, safety or welfare' (HPP2.2(h)(i)). This may meet concerns in some cases, but will not assist doctors who are seeking to collect and use information simply to establish a pedigree.

In my view, there are strong arguments in favour of the law recognising that genetic information is familial and that it should be shared among family members without one member having a right of veto.¹⁴ To quote Professor Giles again: '... each member of a family owns the family history'.¹⁵ What doctors, especially geneticists, need to explain to the lawmakers is that there are two types of genetic information. The first is that a mutation—an allele—is present in a family. The second is the particular individual's own genetic status—whether he or she is positive for the allele. I think the second aspect of the information should be confidential, but the first should be regarded as familial.

Use of genetic information in research

When we come to the use of personal information in research, without consent, the *Health Records Act* is less troublesome.¹⁶ Information may be used without consent in research if it is '... impracticable ... to seek the individual's consent'; identification is necessary in the research; and the use accords with guidelines issued by the Health Services Commissioner (HPP 2.2(g)). This may be compared with paragraph 16.13 of the NHMRC *National Statement on Ethical Conduct in Research Involving Humans*, 1999¹⁷, which enables a human research ethical committee to waive the need for consent in certain circumstances before genetic information (and material) is used in research.¹⁸

Use of human bodily material in research

More problematic is the use without consent of human bodily material—rather than genetic information—in research. Certainly, this is envisaged in certain circumstances by the NHMRC's recently revised *National Statement on Ethical Conduct in Research Involving Humans* (1999).¹⁹ Clause 15.7 of the statement states that specific consent is generally required before tissue samples are used in research if they have been obtained for, or stored following clinical investigations, held in archives or banks 'or removed in the course of a clinical procedure and not required for any clinical purpose' where the research 'may lead to harm, benefit or injustice to a donor'. However, a human research ethics committee may waive the need for consent, taking into account among other things 'the nature of any existing consent', whether it is 'impossible or difficult or intrusive to obtain specific consent', 'proposed arrangements to protect privacy' and 'possible commercial exploitation of derivatives of the sample' (clause 15.8). Thus, at least from an ethical perspective, this would seem to deal with the problem of using extracted teeth in a research project without going back to the people whose teeth were taken to seek their consent. However, although the *Health Records Act* deals with genetic *information* rather than material, one might raise issues as to whether the use of at least some types of tissue involves information connoted by the tissue as well as the tissue itself.

What is far more problematic is the *ownership* of genetic material and the right to share in the proceeds of scientific research involving one's bodily material. Already, as I noted earlier, people are asking questions about who 'owns' excised human body parts. I spent the first half of 2001 on study leave in the United Kingdom. The newspapers were dominated by press reports of events at the Bristol Infirmary and the Alder Hey Hospital in Liverpool. Many were like a report in the Hobart *Mercury* on 1 Nov 2001: 'Body parts row erupts'. The word 'scandal' invariably accompanied reports of doctors' practices of retaining tissue for research and teaching after post-mortem—practices which have, of course, been common around the world for decades and have served us well in numerous ways.

Let me remind you of what happened at the Bristol Infirmary. A number of children died or suffered serious injuries following surgery at the paediatric cardiac unit of the hospital. A widely publicised investigation was initiated.²⁰ Two doctors were later de-registered and very large damages are being paid as a result of civil suits against the hospital. The investigation found that post-mortems were conducted on the children who died and it became evident that body parts and tissue quite properly removed from the children's bodies for the post-mortem had been retained for later examination and research without their parents being informed or given an opportunity to object. Many parents were angry when they discovered that the child they had buried was missing organs, even a brain. The Alder Hey inquiry raised similar issues concerning the use of body parts and tissue removed for post-mortem, but the circumstances were exacerbated by the much more extensive retention of organs, with many being retained for no apparent purpose.

Both inquiries ultimately recommended that parents and next of kin should be consulted about post-mortems and the retention of organs and tissues, and that they should be entitled to have excised body parts and organs returned on request for burial or cremation. In the Bristol inquiry, this recommendation extended to tissue as well as larger parts of bodies. If this

ultimately becomes the law, it will prevent tissue retained after post-mortem being used without specific consent from the next of kin. The same principle would presumably apply to other stored tissue—blood taken after motor accidents for blood alcohol testing; cervical tissue left over from pap smears; other pathology samples no longer needed for testing or quality assurance; Guthrie cards stored long after the initial genetic tests for which they were prepared would be unavailable for research and teaching. So who does legally own excised body parts and tissue?

The development of the current law can be neatly summarised by a time line²¹ indicating the legal decisions and policy recommendations over the last 120 years:

Time Line

- 1882: No one legally owns bodies and body parts.²²
- 1908: A person can gain an ownership interest in a dead body by undertaking 'work and skill' on it, such as preserving a foetus in formalin. They can then sue for its recovery if it is stolen.²³
- 1974/76: Urine²⁴ and blood²⁵ are property that can be stolen. Taking them is theft.
- 1990: A person whose cells are removed during surgery and later used in research without the person's consent is not legally entitled get them back or to share in the profits of the cell line developed from them. The researcher is entitled to patent the cell line and to take all the profits.
- 1992: Blood products are goods and covered by consumer protection legislation.²⁶
- 1998: Body parts can be stolen, such as an artist taking them away from the Royal College of Surgeons to draw them.²⁷
- 2000: Tissue that has been surgically removed is property for the purposes of ordering that it be made available for forensic tests.²⁸
- 2001: Parents of deceased children should be informed and their consent sought before a post-mortem even if consent is not legally required; and they are entitled to have their child's body, body parts and tissue returned to them on request for burial or cremation.²⁹
- 2001: The law on human bodily material should not depend on 'whether the human material has been worked on and in consequence has acquired different attributes'.³⁰

We have reached a point where the law could go either way. We could take the track that has been adopted in the United States, where genetic privacy and non-discrimination legislation is gradually being passed in various jurisdictions that acknowledges that people may have a property right in their own tissue. This model was the prototype for a Bill introduced into the Australian Senate by Senator Stott Despoja, the Genetic Privacy and Non-Discrimination Bill 1998. That Bill has now lapsed but a similar one could be introduced. It required written authorisation to be obtained before any tissue be removed and that, before it was given, the person must be informed whether the tissue would be used in research and whether there might be

a commercial benefit. If so, the person had the option to waive the benefit or choose to participate in it. (There was provision for research without consent if the potential benefit outweighed the risk to people concerned and there was adequate privacy protection.)

So what next?

Concerns about privacy are clearly stimulating public debates about the use of human tissue. The federal Attorney-General's reference to the ALRC and AHEC seeks advice on '... whether, and to what extent, a regulatory framework is required to protect the privacy of human genetic samples and information ...' (emphasis added).³¹ I think that more research is needed on community attitudes to the use of genetic information without specific consent, both in the therapeutic and research context. Dr Lynn Gillam, a philosopher from the University of Melbourne, found from a pilot study of people's attitudes³² that under a third of the sample (29 per cent) said that they wanted to be contacted for consent to use their stored tissue in research. This rose to 40 per cent if the research was on their disease; and 52 per cent if there was a possibility of commercialisation. But it was still barely a half of those surveyed and the study did not canvass de-identified use of material or information, monitored by an ethics committee.

For the record, I should state my own view. I think that people (or the personal representatives of people who have died) should have a personal autonomy right to be consulted about the use of their bodies, body parts and tissue in teaching, research and commercialisation of biological inventions, and to refuse or to impose conditions. To support this right, ethical statements like the NHMRC *Statement on Ethical Conduct in Research Involving Human Subjects* and guidelines published by professional associations should emphasise the need, as a general principle, to consult people and to obtain their consent before using body parts or tissue in research or teaching.

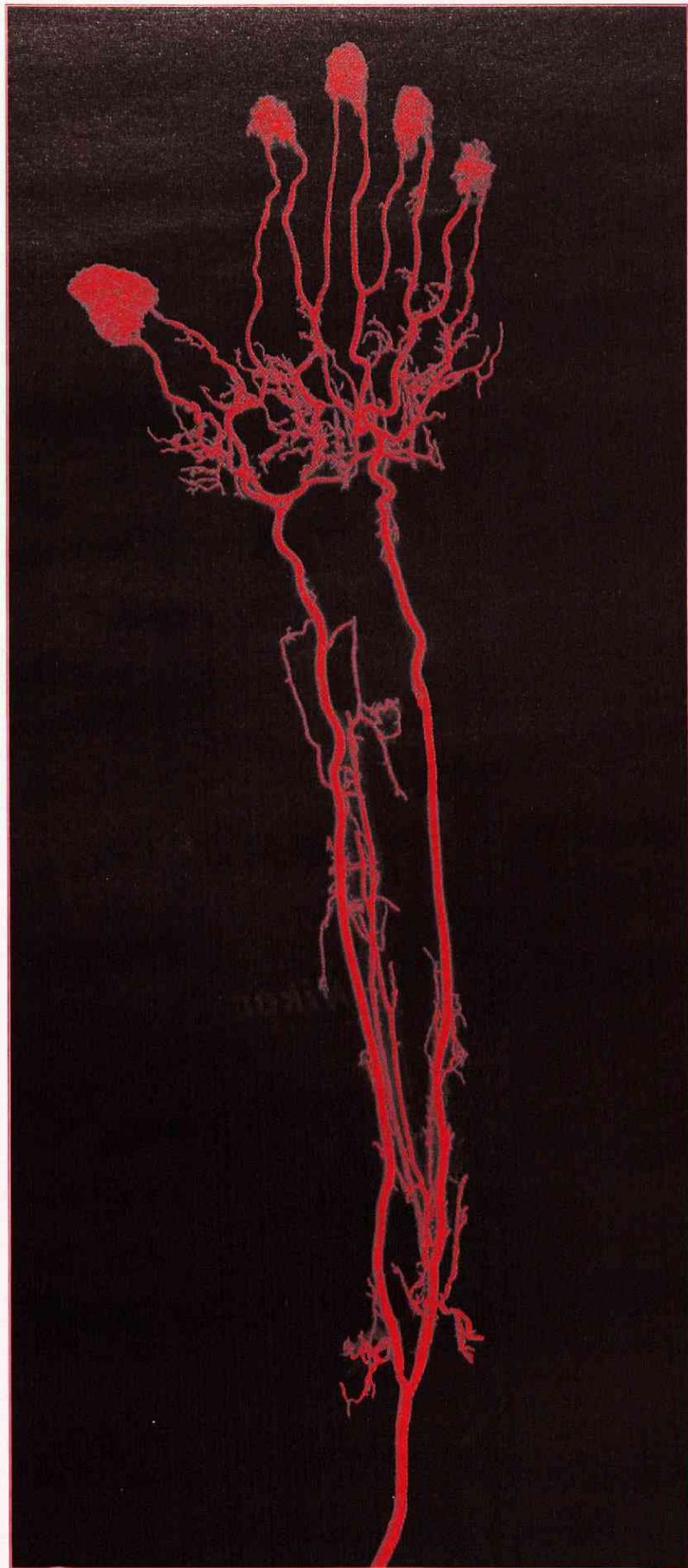
However, in my view, the law should not recognise a general proprietary right of people in their own excised body parts or tissue (except for the limited right of personal representatives to gain possession of bodies and body parts of people who have died for burial or cremation if they so wish). That tissue should be subject to proprietary interests in favour only of the hospital, research institute, its staff or the people to whom they transfer it. The same rule should apply to bodies or body parts held by a hospital or research institute with the consent of the person concerned, though the bodies or body parts may ultimately have to be returned for burial or cremation. Tissue removed under a statutory requirement without consent, such as for coronial investigation or forensic tests, should be used only for the purposes prescribed by the relevant legislation.³³

- 1 Familial Adenomatous Polyposis (FAPP) and Hereditary Non-Polyposis Color-Rectal Cancer (HNPCC).
- 2 Lecture to graduate students in Law and Human Genetics, University of Melbourne, Oct 2001.
- 3 FAP was recognised as genetic eleven years ago; HNPCC less than a decade ago.
- 4 Lecture to graduate students in Law and Human Genetics, University of Melbourne, Oct 2001.
- 5 Anti-Cancer Council of Victoria, Cancer Genetics Ethics Committee, *Ethics and Familial Cancer*, 1996.
- 6 Australian Law Reform Commission and Australian Health Ethics Committee, Media Release, *Safeguards needed for use of genetic information*, 14 Nov 2001.
- 7 Ibid.
- 8 *Health Records Act 2001* (Vic) s 3(1), definition of 'health

information' includes 'genetic information about an individual in a form which is or could be predictive of the health (at any time) of the individual or of any of his or her descendants'.

- 9 Ibid, ss 3(1) (definition of 'organisation'), 10, 11.
- 10 Ibid, Sched 1. Information may also be collected without consent where this is required or authorised by law; where a person cannot consent; for research; to prevent harm to a person or the public; for law enforcement; and in legal actions: ibid.
- 11 Ibid, Sched 1. Information may be used for other purposes associated with the primary purposes and in other limited circumstances without consent, similar to those noted in note 6 above: ibid.
- 12 HPP 2.4(a)(i) allows health service providers to disclose health information about an individual to an 'immediate family member' of the individual if 'the disclosure is necessary to provide appropriate health services to or care of the individual but that applies only if (c) the individual is incapable of giving consent to the disclosure' (HPP2.4(c)).
- 13 Patients may obtain and use information from family members because the Act does not apply to 'the collection, holding, management, use, disclosure or transfer of health information ... only for the purposes of, or in connection with, [an individual's] personal, family or household affairs': s 13.
- 14 As I have argued more fully elsewhere: L Skene "Patients" rights or family responsibilities? Two approaches to genetic testing' (1998) 6(1) *Medical Law Review* 1-4; L Skene 'Genetic Secrets and the Family: A Response to Bell and Bennett' (2001) 9(2) *Medical Law Review* (UK) 162-169.
- 15 See note 4 above.
- 16 Similarly, genetic information may be used without consent in monitoring health services: HPP 2.2(f).
- 17 NHMRC. Report E35. National Statement on Ethical Conduct in Research Involving Humans. Canberra: Commonwealth Department of Health and Aged Care, 1999. <http://www.nhmrc.gov.au/publications/ehome.htm>
- 18 This is similar to the text quoted in the next paragraph of this paper.
- 19 Note 17 above.
- 20 <http://www.bristol-inquiry.org.uk/index.htm>
- 21 Reprinted by permission from *Nature Reviews Genetics* Vol 3 pp 145-148. Copyright (c) 2002 Macmillan Magazines Ltd
- 22 *Williams v Williams* (1882) 20 CD 659; *R v Kelly* [1998] 3 All ER 741 at 749 (Rose LJ).
- 23 *Doodeward v Spence* (1908) 6 CLR 406 (HCA). *R v Kelly* [1998] 3 All ER 741 at 749 (Rose LJ).
- 24 *R v Welsh* [1974] RTR 478 (CA).
- 25 *R v Rothery* [1976] Crim L. R 691 (CA).
- 26 *PQ v Australian Red Cross Society* [1992] 1 VR 19
- 27 *R v Kelly* [1998] 3 All ER 741 at 749 (Rose LJ).
- 28 *Roche v Douglas* [2000] WASC 146 (WASC).
- 29 *Interim Report of The Inquiry into the management of care of children receiving complex heart surgery at The Bristol Royal Infirmary*, chair Professor Ian Kennedy, May 2000, Annex B para 66.
- 30 Id, para 33.
- 31 See Australian Law Reform Commission, Terms of Reference: <http://www.alrc.gov.au/>.
- 32 Survey conducted by Susie Patterson, Mater Hospital Brisbane, and Lynn Gillam, University of Melbourne (unpub) The study was conducted at ethics committee seminars. There were 177 responses (approx. 40% response rate).
- 33 See L Skene, 'Proprietary rights in human bodies, body parts and tissue: Regulatory contexts and proposals for new laws' (2002) 22 (1) *Legal Studies* 102-127; L Skene, 'Arguments against people legally "owning" their own bodies, body parts and tissue' (2002) *Macquarie Law J* (in press).

M A G A



'OBSERVING THE NATURE OF OUR HUMAN BODIES'

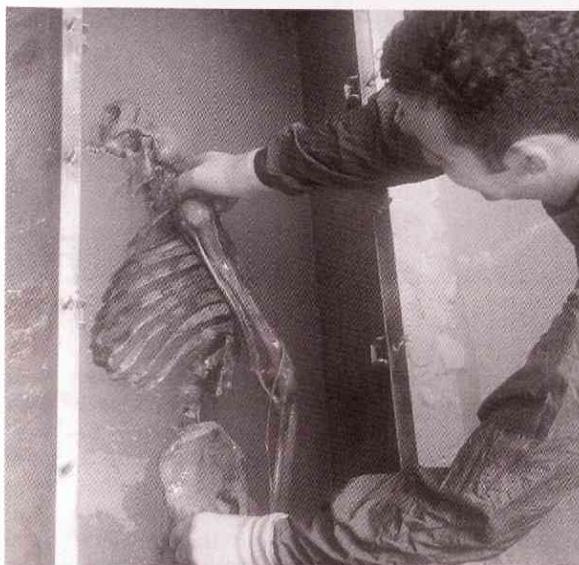
BY CHRIS BRIGGS

JUST OVER A year ago, the Department of Anatomy and Cell Biology completed a novel project for the new Melbourne Museum: creating a series of original dissections of human body parts that provide a unique three-dimensional view of the body's major organ systems. These dissections have been on display in the Mind and Body Gallery of the museum (located in Carlton Gardens, alongside the Exhibition Buildings) since the end of March 2001 and have attracted a great deal of public interest.

Although this is not the first time human anatomical specimens have been on show in a public museum in Victoria (a human hand and a heart were displayed in the former children's section of the Victoria Museum), the challenge of the Mind and Body Gallery was to create examples of real human structure that would be educationally enlightening for broad sections of the community. Understanding the human body is no longer solely of interest to medical and health professionals. The museum had undertaken audience research that indicated an overwhelming majority of people wanted to know more about

perceptions of the body have changed over the centuries; 'Biotech & Beyond' looks at the development and application of biotechnology in foods and medicines; and 'Medical Melbourne' portrays Australia's four Nobel Prize winners in medicine and features the biomedical science, research history and achievements of scientists living and working in Melbourne.

The Department of Anatomy and Cell Biology assisted with several of the gallery's projects, but its major contribution was to the 'Body Parts' exhibition. Melbourne Museum staff first drafted papers addressing ethical issues associated with the display of human specimens then, early in 1999, members of the department—Bill Kaegi, Matt Jackson, Scott Robbins and myself—met with some of the curators of the museum, including David Smith, former director of the Human Mind and Body Program, Nurin Veis, senior curator for the Body Parts exhibition, Bronwyn Terrill, Julie Egan and Adrienne Leith. This team, with regular input from other museum staff and a variety of consultants, developed the 'Body Parts' concept and met on a regular basis over the following three years.



SCOTT ROBBINS (TECHNICAL OFFICER IN CHARGE OF THE PLASTINATION LABORATORY) PREPARES A PERIPHERAL NERVOUS SYSTEM FOR PLASTINATION

their bodies. At the University of Melbourne we realised some time ago that many people are enthusiastic to learn about human anatomy. On the university's annual open day, the Anatomy Museum overflows with the families and friends of prospective and current students, all viewing the teaching specimens and with a desire to know more. More recently the Anatomy Museum has attracted large numbers of organised school groups, visiting the museum to expand their knowledge of human structure and function.

One of the stated aims of the Mind and Body Gallery is to demystify how medicine and biomedical science impact on life. To achieve this the gallery contains four major thematic exhibitions: 'Body Parts' illustrates and explains the basic building blocks that contribute to, and the essential components of, the body's major organ systems; 'Body Scape' explores our understanding of how the human body is constructed and how



MATT JACKSON DISSECTING A HAND TO REVEAL THE VESSELS AND NERVES

Following initial discussions, sketches were drawn of how the completed dissections might look, these were then refined and eventually more than forty prosections of individual body parts and systems were prepared. Whilst some established preparation techniques were used and parts were displayed in traditional pots, other more modern techniques were also

employed. The picture on p.48 shows a resin cast of the arterial supply of the forearm and hand. To achieve this result, the brachial artery of an unembalmed forearm was cannulated above the elbow. Blood was flushed from the vessels and a mixture of polyester resin, together with a catalyst, was injected via the radial artery and the resin then allowed to polymerise. Maceration of soft tissue was achieved using concentrated hydrochloric acid and took approximately three weeks to complete. The specimen illustrated was prepared by Scott Robbins who has overseen the development of the department's Anatomical Technologies Laboratory, set up in 1995 with the assistance of a grant from faculty.



PLASTINATED SPECIMEN OF A HAND

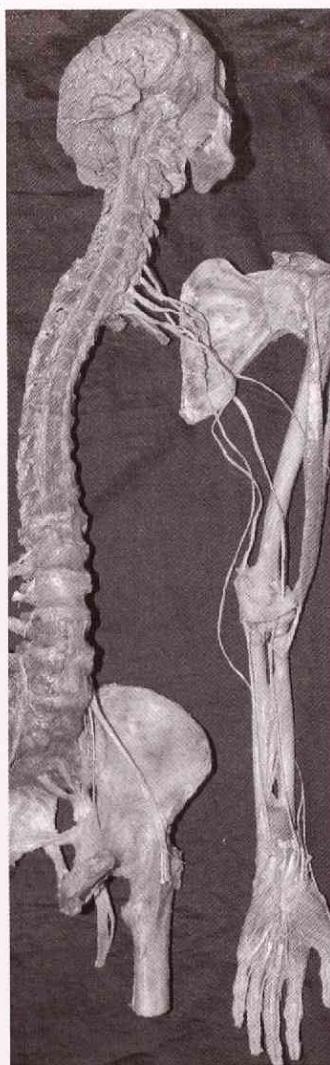
Dissections of the nervous system, male and female genitourinary systems, the gastrointestinal system, the musculoskeletal, circulatory, endocrine and respiratory systems, were all prepared using a process known as 'plastination'.

Plastination is a technique of preparing anatomical specimens that was developed in Germany approximately twenty years ago. The process replaces the water content of an embalmed cadaver specimen with a silicone polymer. The specimen is first dehydrated in acetone at -25°C, then placed in a vacuum chamber and submerged in liquid silicone. It can take up to four weeks for the silicone to impregnate the specimen, after which it is left to cure. The entire process may take three months or more, depending on specimen size.

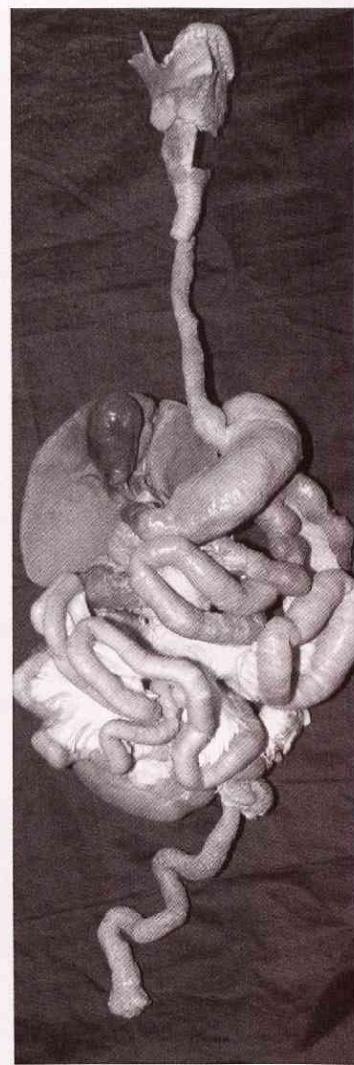
Advantages of the plastination technique are that specimens are odour free, touch-dry and able to be stored in the open (rather than in traditional storage tanks of alcohol and water). The department is currently using plastinated parts for both its undergraduate medical and health professionals' teaching programs and in the post-graduate Diploma of Surgical Anatomy.



PLASTINATED SPECIMEN OF A FOREARM AND HAND



PLASTINATED SPECIMEN OF CENTRAL AND PERIPHERAL NERVOUS SYSTEM



PLASTINATED SPECIMEN OF GASTROINTESTINAL TRACT

As the Melbourne Museum project approached completion a team of conservators was engaged to work closely with members of the department in planning the displays. Cabinets were designed and fashioned from glass with a plinth in the base to hold a 20mm-thick, clear acrylic sheet. An outline of the human form was etched into this sheet, enclosing the specimens and displaying them relative to their position in the body. Scott Robbins liaised closely with members of an exhibition design company ensuring that all organ systems were located as accurately as possible to match living anatomy.

Although there was initially some anxiety about the displays of anatomical specimens in the Mind and Body Gallery, feedback to museum staff has been very encouraging. Public response to the gallery displays has included the following comments:

Informative and better than any display of its kind. Gloriously disgusting

I loved seeing real body parts—illustrations don't let you appreciate how difficult it is in reality for a surgeon to locate organs. Models make it look simple and obvious when really, our body is so complex

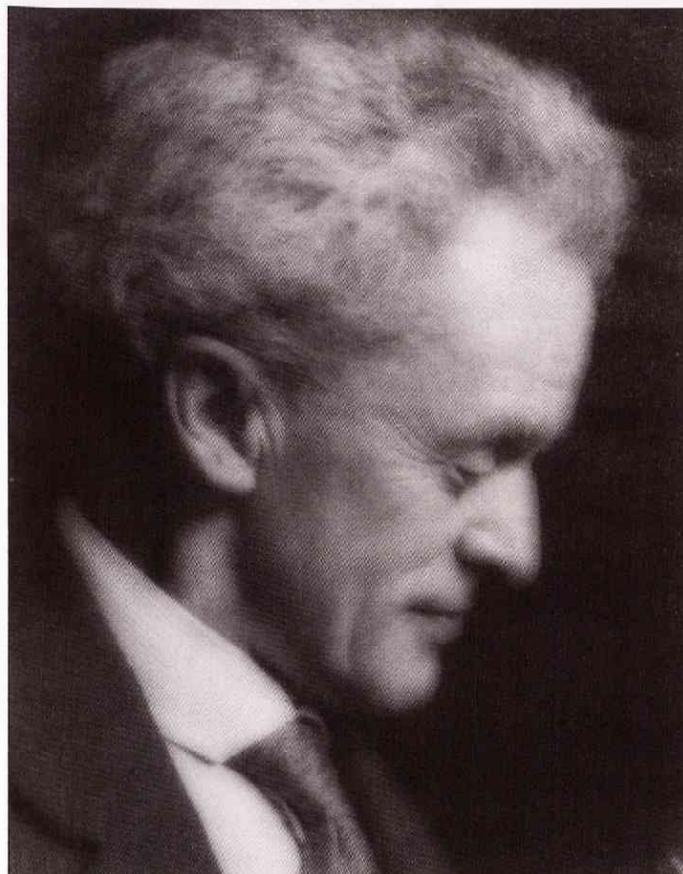
It's a humbling experience to stare into the face of our own flesh and blood. The awe-inspiring experience of observing the nature of our human bodies.

Chris Briggs is an Associate Professor in the Department of Anatomy and Cell Biology

TWO MELBOURNE MEDICAL MEN

Professor Berry and the Eugenics Debate

BY ROSS JONES



PHOTOGRAPH OF RJA BERRY BY JACK CATO, PHOTOGRAPHER OF ELIZABETH STREET, MELBOURNE. THE PHOTOGRAPH IS SIGNED 'YOURS VERY SINCERELY RJA BERRY' IN INK AND 'JACK CATO FRPS' IN PENCIL.

ON 3 APRIL 1925, Professor Richard Berry, then Dean of the Faculty of Medicine at the University of Melbourne, gave a lecture in the anatomy school lecture theatre to the University Science Club, on the subject of 'feeble-mindedness'.¹ In only its second edition, the University of Melbourne student newspaper, *Farrago*, featured Berry's talk on the front page with the unreservedly hereditarian eugenic title 'Born Idiots'.² Berry's message, that the sub-normal members of society were spreading their inferior genetic material, needed no hard selling at the University of Melbourne Science Club in 1925. The meeting was so well attended that there was standing room only. According to the reporter, the subject matter of the lecture awakened in the students an awareness of:

... (t)he particular danger to the community of the moron—the type of individual who, although capable of managing his affairs in a more or less satisfactory way, is nevertheless definitely sub-normal and has not full control of the animal appetites and desires.

Berry's slides showed the famous example of the 'notorious' American Kallikak family³ which, the reporter believed:

... provide the most terrible argument against present methods of assisting the feeble-minded to take their place as members of a normal community, instead of caring for them under conditions which will prevent them from sending into the world fresh supplies of sub-normal blood.

The *Farrago* reporter was offering support for the popular contemporary measures of institutionalising or sterilising a significant proportion of the population. In the 1920s and 1930s sterilisations totalled around 40 000 in the United States and over 90 000 in Scandinavian countries and included, amongst others, petty criminals, prostitutes, homosexuals, those who tested poorly on IQ tests and alcoholics (though the poor were overwhelmingly represented as a group).

The meeting at the anatomy school was of no small significance for a number of reasons. First, Richard Berry was a considerable public performer and a widely read commentator on public policy issues, both in the area of medicine as well as in topics well outside his professional expertise. During the First World War he had been a regular columnist for the immensely influential *Argus* newspaper—frequently taking up more than a page to present his argument in favour of the 'Newer Imperialism'. This was an economic and political philosophy that promoted intelligence and efficiency over 'one man—one vote' representation and the so-called power of the mob—an early form of fascism. In the series of articles Berry argued against the trade unions and strikes, and angrily demanded a reduction in the number of parliamentary representatives, to be followed by the appointment of a select group of 'experts' to advise the government for the purpose of increasing the efficiency of the nation and empire. The left vilified Berry for these arguments. This antagonism resulted in the chaotic scenes that accompanied Berry's appearance in support of the 'yes' vote for conscription at a public meeting at the North Melbourne Town Hall on the evening of 30 November 1917.⁴ When the chairman had suggested they open the meeting with the singing of the national anthem, the *Argus* newspaper reported that:

... the opposition section broke out into shouts of derisive laughter. They remained seated, the men wearing their hats, and endeavouring to drown the voices of the singers by stamping and blowing trumpets.⁵

Following the singing of the anthem ... Professor Berry, the *Argus* informed its readers:

... managed to deliver a few audible sentences, but some of the rowdy element went to the side doors situated near the stage, and by kicking at them drowned every word that was said inside the hall, ...

the consequence being, the *Argus* went on to explain, that 'Professor Berry was unable to proceed with his address'.⁶

On the topic of race deterioration and the threat of the feeble-minded, however, Berry filled the largest halls in every capital city of Australia with enthusiastic and supportive audiences. A national tour, taken at the time of his address to the University of Melbourne Science Club, had been funded by the Edward Wilson Trust, a creation of the *Argus* newspaper, and was intended to raise support for a raft of policy initiatives of eugenic tone designed to purify and improve the Australian race. An analysis of his success, or otherwise, in implementing his policies is too lengthy to explore here—the power with which he presented his arguments, his success in popularising his views and the almost uncritical acceptance of eugenics as cutting edge science is now undisputed.⁷

Richard Berry retired from the university in 1929 and returned to Britain to become a vocal and important advocate of eugenic policies. By the mid-1930s he was advocating not only the sterilisation of the 'mentally unfit', but also



PHOTOGRAPH OF THE PORTRAIT OF RJA BERRY, PAINTED BY JUSTUS JORGENSEN, c1927, WHICH HANGS IN THE MEDICAL SCHOOL SUNDERLAND LECTURE THEATRE

the elimination of those members of society who were a burden on the state. Although he lived into the late 1950s, Berry's influence waned dramatically after the Second World War, as did the biologically determinist views held by many influential Melburnians. Until recently the eugenic campaigns and research of Berry and many of those who supported the eugenic movement in Australia, was forgotten or ignored. It is perhaps no accident that now, when we have some in the medical research establishment in Melbourne advocating debate on the topic of the new eugenics that lies behind current genetic engineering and testing, the importance of the eugenic movement in Melbourne during

the first four decades of the twentieth century should be revealed.

Ross Jones is Lecturer in Medical History in the Department of History and Philosophy of Science and the Centre for the Study of Health and Society at the University of Melbourne

- 1 See the report in the *Argus* 4 April 1925, p. 33.
- 2 *Farrago*, vol. 1, no. 2, April 17, 1925, p. 1.
- 3 Goddard, Henry Herbert, *The Kallikak Family: A Study in the Heredity of Feeble-mindedness*, Macmillan, New York, 1921.
- 4 *Argus*, 1 December 1917, p. 19; *The Age*, 1 December 1917, pp. 13-14.
- 5 *Argus*, 1 December 1917, p. 19.
- 6 Ibid
- 7 RJA Berry, *Chance and Circumstance*, unpublished autobiography, University of Melbourne Medical Library, 1954, pp. 143-144. For a list of Berry's extensive travelling and lecturing see RJA Berry, 'Publicity Campaign', *Report to The Edward Wilson (of 'The Argus') Trust on Mental Deficiency in the State of Victoria, with Suggestions for the Establishment of a Child Guidance Clinic*, Wilson and Mackinnon, Melbourne, 1929, pp. 4-5.

WHEREVER I AM WANTED A Dedicated Life —Gordon Clunes McKay Mathison

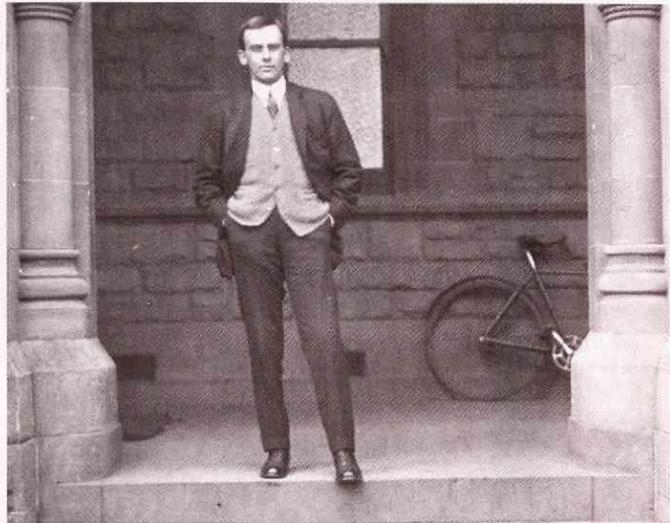
BY ANN BROTHERS

THE PRINTING OF an unidentified negative, passed on to the Medical History Museum from the faculty development office, began the unravelling of a very moving story. Despite being shown to many alumni over a number of months, the personable young man photographed in front of the steps of a sandstone building could not be named, and it seemed that he would remain a mystery figure. However, quite by chance, another copy of the photograph turned up amongst the museum's collection of small format photographs, and he was identified as Gordon Clunes McKay Mathison, Melbourne medical graduate of 1906. This name will be familiar to many through the Mathison Memorial Lectures, which have been presented triennially since 1923. Although *Chiron* published a short biography of Mathison, in 1992¹, I felt it timely that an account of his brief but brilliant life should be brought to light again, so that, in the words of Professor Harry Allen, 'His memory will ever remain clear and bright, to inspire the Melbourne Medical School'.

Mathison was a student of Queen's College, and graduated in 1906 with first class honours in every subject. He was resident surgeon to the Melbourne Hospital for twelve months, and then demonstrator of physiology at the university and medical tutor at Ormond College.

Two years after graduating Mathison went to London, where the excellence of his research soon attracted attention. At first he was lecturer in physiology at St Mary's Hospital, then later appointed assistant to the professor of physiology at University College, where he was regarded as one of the most brilliant men in that famous institute.

In 1910 Mathison was appointed Beit Memorial Research Fellow, and worked at University College, University College Hospital, the Medical Polyclinic at Freiberg and the Lister Institute of Preventive Medicine. In 1913, before leaving London, he was senior resident medical officer at the Royal Chest Hospital for six months, and was awarded the degree of DSc from the University of London. Returning to Melbourne, he accepted the positions of



THE MYSTERY PHOTOGRAPH OF YOUNG GORDON MATHISON, c1913

Sub-Director of Pathology and Sub-Dean of the Clinical School at the Melbourne Hospital.

Before the outbreak of war, Mathison was responsible for organising the pathological work at the Melbourne Hospital, and his many publications (several of which are held in the museum) demonstrate the background that fitted Mathison to fill the position of director of Australia's first pathological research institute, The Walter & Eliza Hall Institute, for which Professor Harry Allen had him earmarked. This appointment, however, and without doubt a brilliant career in medical science, were not to be, for Mathison's life was cut short at Gallipoli on 23 May 1915. Recognised as one of the most brilliant young men of Australia, with a remarkable genius for research, CJ Martin, former acting professor of physiology at the University of Melbourne and director of the Lister Institute, spoke of him thus: 'He always seems to know by instinct the essential difficulties of a problem and how to tackle them'. With Mathison's outstanding qualities recognised internationally, the Melbourne School of Medicine—and Australia—had suffered an irreparable loss.



GORDON MATHISON'S GRAVESITE, IN THE ALEXANDRIA (CHATBY) MILITARY AND WAR MEMORIAL CEMETERY, EGYPT



GORDON MATHISON, 1914

To these more formal acknowledgments of Mathison's distinguished work can now be added material from several other sources, which make him known more immediately to us as a man whose personality and company we would have both admired and enjoyed.

These accounts are taken firstly from *Speculum*, in issues dating from 1915-16 located in the rare books collection of the Brownless Biomedical Library; from *The University of Melbourne Registrar's Correspondence*, February 1915-March 1916 (University of Melbourne archives); and from Dr EH Gugden, first master at Queen's College, in his *History of Queen's College within the University of Melbourne* (Queen's College archives).

We know that *Speculum* was in circulation on the battlefields of Gallipoli, because Vic Conrick writes in the October issue from 'somewhere in Turkey', in June 1915, of the utmost pleasure he took in reading every word when he came across his familiar magazine. Details of Mathison's death also appeared in this October 1915 issue. An extract from the official press report of the work of the AAMC at Gallipoli, by Captain Bean, written under the date, 'Gaba Tepe' June 12, 1915, read as follows:

If one man did more than any to catch up with the hopeless press of work during that night, it was the surgeon of the 5th Battalion, Capt. Mathison. He had established his dressing station in a cavity in the creek bank, where the Fifth Battalion had bivouacked during the day, and there all through the first part of the night he attended to those wounded men who had not been temporarily dressed in the field.

Towards morning, the moment this work showed sign of easing, Capt. Mathison went up to the field himself to a trench which ran across it about 500 yds behind the firing line. This trench was the only shelter on the field, and it had gradually filled with wounded. Capt. Mathison went through this, attending as far as he could to the wounds of the men in it, who had been longing all night for the attentions which could not be spared them then.

The moment he got back he heard that the Brigadier had just been wounded, and at once went out to find him. When he returned, it was just on daybreak, and it was clear that it would soon become too bright for anyone to work on that heath. Capt. Mathison led up a party of stretcher bearers—the last that could have gone into the open that day, and he let it be known that 'Whenever I am wanted, just tell me, and I will try to go'.

After the worst of the stress was over, about 4 pm Capt. Mathison was sitting outside his dugout, far back down the creek, putting on his boots, when one of the so-called spent bullets hit him in the head. He never regained consciousness, and died shortly after reaching the hospital in Alexandria.

It was a sad irony of fate that Mathison, after coming safely through all the perils of the stricken field, should meet his death by the cruellest mischance, being hit by a chance shell, cut off whilst resting from his toils.

Professor Harry Allen, master at Ormond College at this time, had the opportunity to know Mathison on a more informal basis, and so it was a more personal tribute he chose to add to Mathison's obituary in the *Medical Journal of Australia* of June 1915. He commences,

I speak of him as a friend, and as a friend he was wonderful ... 'Mathie' or 'Maggie' as he was familiarly known, did not advertise his importance with a brass band ... But a few minutes in the society of this unassuming little figure, and you began to sit up and take notice. And the more you knew him, the more notice you took.

We were a very happy company that year, 'Mathie', Latham, Parnell, Ulrich: and many a merriment have we made together. There would he be, sprawling in his favourite attitude, prone on my hearth-rug, with wit and wisdom bubbling out of him, or giving us a correct imitation of some well-known figure at the hospital. He was such an inveterate mimic that he could hardly help imitating the mannerisms of the man he was talking to. He never flagged: the variety of his interest was remarkable. I have been with him on all sorts of occasions—smoking and yarning, cricketing, camping, canoeing, fishing, ski-running—and it was always the same: whether it was a question of scientific knowledge, or of academic diplomacy, or the value of a book or a picture or a piece of music, or the fastening of a ski-binding, it was always 'Ask Mathie'. Wherever he was, there was something doing, and wherever there was anything doing, there he was. His cheery, chubby figure was welcome everywhere; he knew every Professor and every policeman in London, and was equally at home hobnobbing with either. He was like Kim, 'the little friend of all the world'.

He was one of the first to volunteer for service, and, being one of the first, was put into a place too dangerous and too unworthy for so valuable a man. But he went through with it, because he felt it was his duty.

And now he is gone, lost to his country and his friends, wasted by the wickedness of war.

Another account of the death of Mathison, and the effect the First World War had on the university, was given by Dr EH Sugden, the first master at Queen's College:

In August 1914, came the Great War. The immediate result of this was a decrease in the number of Resident Students, as almost all the men who were not incapacitated through age or physical unfitness volunteered for active service in the course of the next four years. Before the conclusion of the war over 300 Queen's men had volunteered for service, and 30 of them were killed.

The first of our old students who fell in action was Dr G C Mathison. He had gone into Gallipoli with the Australian Forces and was struck by a fragment of a shell. A Service in his memory was held in the College Chapel, when the Master gave an Address founded on the Book of Wisdom, v.13. 'He being made perfect in a short time fulfilled a long time'.

This text, by his mother's wish, was inscribed in 1917 on a tablet unveiled in memory of Mathison at the Melbourne Hospital, and an account of the service appeared in the *Argus* on 11 November of that year. Testimony to the attainments of Mathison in medical science, both in England and in Australia, and of his great personal influence, was given by Sir Harry Allen, who unveiled the memorial tablet.

The tablet has survived the years and its several moves, and is today to be found installed outside the lecture theatre on the seventh floor of the Walter and Eliza Hall Institute. A more appropriate location could not be found, so fitting to the memory and life of Gordon Clunes McKay Mathison.

Ann Brothers is Curator of the University of Melbourne Medical History Museum

1 'Gordon Clunes McKay Mathison, MBBS 1906, MD 1911, 1884-1915', *Chiron*, Vol.2, No.5, 1992, p.16

GRAFFITISTS OF THE MEDICAL SCHOOL

Featured on the cover background and back cover of the 2001 issue of Chiron were some photographs of old benchtops on which past medical students had carefully carved their names and initials during lectures. These benchtops were rescued from the old medical and pathology lecture theatres before they could be destroyed and some are currently on display in the medical building. Publication of these photographs prompted some of our readers to contact the editors. Stories of three of the students whose names were carved in these benchtops follow.



Clive Mansley Greer

JUST OVER A hundred years ago Clive Mansley Greer was born in Bendigo. It was 1898 and he was the only child of Mansley John Greer, well known in musical circles in Melbourne as the organist and choirmaster of Wesley Church. Although he was only about sixteen when his mother died, Clive did well at school and was dux of St Thomas' Grammar School.

Clive was known to most of his university friends as Bill. He was good at sport, he made friends easily, and enjoyed medicine very much. After a residency at Kyneton, he spent some time at Dromana where he met his wife. His uncle, Claude Greer, was very happy in a general practice in Sea Lake so, after marrying in 1925, Clive bought a practice in Warracknabeal.

He loved the country and the hard-working country people, and quickly settled into the town activities. Being good at sport he played cricket, golf and bowls when work permitted. He played off a very low golf handicap and was club champion six times. The surgery was in his home and there were lots of house calls, often taking him miles out of town on bad roads or dirt tracks. There was no local veterinarian, so it was not unusual for the odd sheep dog to be waiting on the verandah to see the doctor as well!

A stocky man with a strong constitution, helped no doubt, by all the exercise he took, Clive loved family medicine and delivered lots of babies with the usual few being called after him. Help was a long way off and he was always very grateful to the consultants he called on for help when he struck trouble. Clive always had time to spend with his two daughters despite his busy practice, often taking them out on calls.

When war was declared, the workload increased greatly. Of the three doctors in the town, Dr BP Donald was an older man and his son Charles enlisted and was killed. Dr John Searby wished to join the army, so it was agreed that CM Greer would remain and work the two practices. Dr Searby was taken prisoner and was in Changi for a long time but happily he survived. Dr Donald retired and his practice was bought by Dr John Kenny.



CLIVE MANSLEY GREER

He lived near the beach and worked as a ship's doctor on vessels travelling up the coast to Queensland.

When his wife died suddenly, in 1949, Clive went into partnership with Sam Mecoles in Richmond. Once again he was busy working in the family medicine he loved, although the workload was shared with a partner and consultants were only a mile or two away. And, of course, there was more time for golf!

Clive remarried and, after his partnership with Sam Mecoles was dissolved, spent time travelling with his new wife. He moved briefly to Tweed Heads but returned to Melbourne and a life of sessional work and occasional trips as ship's doctor.

He loved his family and his friends and his dog. Best of all he loved the freedom of choice his medical degree had given him, and never wanted to have done anything else. His sense of humour and fun and his quick wit stayed with him, but his golf handicap got a bit higher than he liked!

He died suddenly, at home, in January 1973.

Clive Greer contributed a lot. A very ethical man with great capacity for hard work and fun, Clive always lived in the present or future—his was a very happy and satisfying life. And he did not waste any of it.

by Pat Vanrenen, CM Greer's daughter

Rutherford Kaye Scott



RUTHERFORD KAYE SCOTT

IFIRST MET KAYE Scott when I was a medical student at the Royal Melbourne Hospital. He was honorary radiotherapist at the time and, as a teacher of clinical signs, had a great reputation among students. Not only was he an enthusiastic and skillful teacher, he was friendly and approachable and would go out of his way to explain what could be deduced about a patient following a careful clinical examination.

After schooling at Camberwell Grammar School and Scotch College he embarked on a medical course at Melbourne, graduating in 1927. He then elected to train as a radiotherapist, a relatively new specialty, and became

one of the first people in Australia to practice his specialty fulltime. In addition to his hospital work Kaye ran a busy and very successful private practice, although his specialty was fairly new. He passed the examination for MD and MS (Melbourne) in 1932. He became a fellow of the Royal Australasian College of Surgeons in 1935 and a foundation fellow of the Faculty of Radiologists in London in 1938. (A royal college in this discipline had not yet been founded).

Kaye Scott was a leading figure in establishing the Australian and New Zealand Association of Radiologists in 1935 and prominent in promoting the educative aspects of training for radiologists and radiotherapists. When the College of Radiologists was established in 1949 he was a foundation fellow, and became its president some ten years later. In recognition of his considerable contribution to the science and development of radiation oncology in Australia, the college awarded him its first gold medal, and elected him to life membership. In 1976 the Kaye Scott Prize for the top student in radiation oncology was established.

In the development of cancer services in Victoria he had a pivotal role. With his friend, Professor Peter MacCallum, Kaye Scott was a founding member of the Anti Cancer Council of Victoria (1936). In spite of constant lobbying the government was very slow to act in establishing a specialist radiotherapy service for the state. The Cancer Institute Board first met in 1949, forming the Peter MacCallum Clinic, of which Kaye Scott was medical director for five years in the 1950s. This was the precursor of what became, in 1986, the Peter MacCallum Cancer Institute.

From the time Kaye came up as a student in 1922 until his death in 1991 he had a continuous and active association with Ormond College. He was resident tutor in pathology and surgery (1929-35) and served on the college council (1951-86). He was a great benefactor of Ormond, firstly providing a fund (in honour of his father Dr J Alexander Scott, who practiced in Auburn and Malvern for many years) to provide tutors in the preclinical years with rooms in college, tutors in the clinical subjects and medical books for the college library. Throughout his life his benefactions continued and increased.

In his eulogy a past master of Ormond and Governor of Victoria (Dr Davis McCaughey) emphasised how Kaye Scott's wisdom and generosity had benefited the college. He said: 'It was the remarkable qualities of this man that made him one of the most revered names at Ormond College'. He is remembered at Ormond College by a function room, named in his honour, in which hangs his portrait painted by Adrian Kerfoot, (commissioned by Kaye's friends) and by a travelling scholarship. He was awarded an OBE for his services to medicine.

Apart from medicine, Kaye Scott had other talents. He was an accomplished flautist and it was through his musical interests that he met his wife, Connie Ziebell, a professional violinist. They played together in a number of musical groups and orchestras, including the Melbourne Symphony Orchestra, and at the time of his death Kaye was patron of the Musical Society of Victoria.

In his spare time he cultivated beautiful camellias and azaleas in his garden and engaged in cabinet making.

Pioneer radiation oncologist, skilled clinician, educator, generous benefactor, musician: above all a cordial colleague and a good friend. Kaye Scott was one of our most distinguished medical graduates.

James Guest, MB BS 1941



Siegmund Rabl

THE NAMES OF Siegmund and Victor Rabl are carved in the old benchtops on display in the medical school building. The Rabl name is also etched in the history of Murtoa, a small town near Horsham in Victoria's Wimmera district. Siegmund and Victor's father, Heinrich Rabl, was a medical graduate of Munich University. He migrated from Bavaria to Australia in 1884 and settled in Murtoa, then just a tiny township named Marma Gully. He married Helene Degenhardt, a daughter of one of the original Murtoa settlers, with whom he had four sons and one daughter. Siegmund was born in 1892 and Victor in 1893.

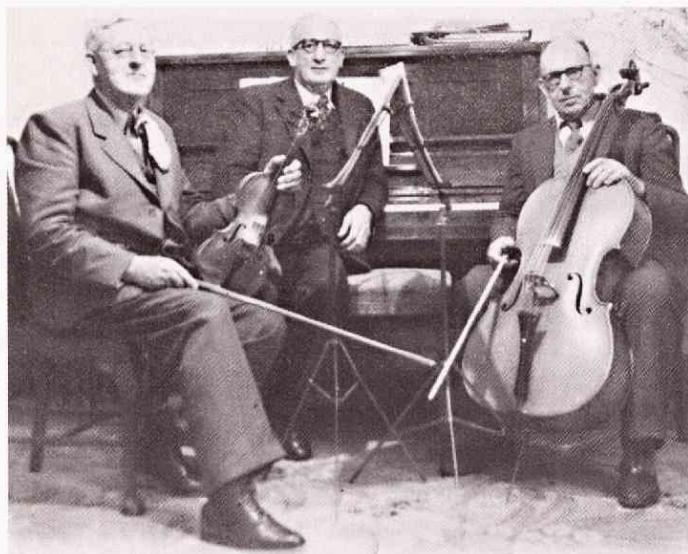
The two boys came to study at the university, Siegmund studying medicine and graduating in fourth place in 1917 and Victor studying dentistry and graduating dux in 1916, while they lived together in nearby Carlton. As students they played violin and viola with the forerunner of the Melbourne Symphony Orchestra. Siegmund became an RMO at St Vincent's Hospital and was registrar at the Children's Hospital in 1919, planning postgraduate study overseas, when his father and mother both died within days of each other in an influenza epidemic. He left his position at the Children's Hospital, abandoned his career plans and returned to Murtoa to take over his father's general practice.

He never married and lived with his sister, Sophie. Together they cared for two of their nephews who had been orphaned by the deaths of their mother in the influenza epidemic of 1919, and their father, Siegmund and Sophie's brother, not long after.

Siegmund's musical talent and his love of chamber music was also a family trait. His father had designed the Rabl family home to accommodate a grand piano on the first floor, and Siegmund was an accomplished violinist who played with the Murtoa Orchestra. Stories have been told of Sophie rushing in during evening chamber rehearsals to tell Siegmund he was



SIEGMUND RABL IN 1918 WITH THREE NURSES FROM THE CHILDREN'S HOSPITAL



SIEGMUND RABL (left) AND VICTOR RABL (right) WITH FELLOW MUSICIAN ERN PETERING IN THE MUSIC ROOM AT MURTOA

needed to attend to someone—often at an outlying farm. While continuing to play, Siegmund's standard reply was, 'I'll come as soon as we've finished this movement'.

Many of the stories about Siegmund Rabl, as is common with stories of rural doctors, tell of his generosity, his selfless dedication to his patients and to the town, and his consummate medical skill. He took just two weeks holiday in the nearly fifty

years he spent as doctor to the town, and for the last fourteen years of his life he did not charge patients. Specialists would often return patients referred by Siegmund commenting that they could not improve on his care. Certainly, he was deeply involved in the life of the town. When the local golf club wanted to buy some of his virgin land for the course, he sold it to them for a pittance. His reason for not making an outright gift was that he wanted to avoid being thought of as a benefactor, particularly as it was intended to name the course after him. He held official positions in the racing and golf clubs, and enjoyed both sports.

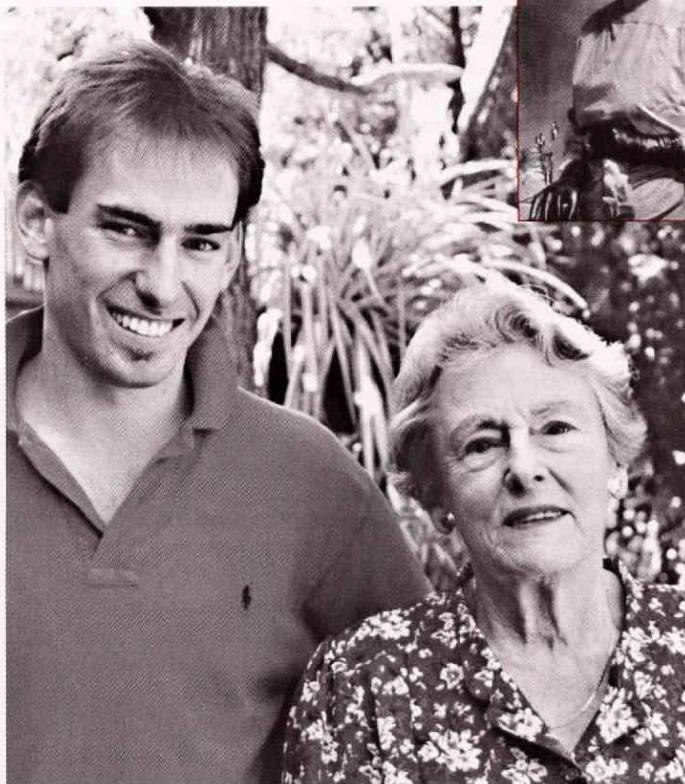
Victor Rabl also spent most of his working life serving the community of Murtoa, working all hours until a heart attack forced him to slow down and move to Melbourne. He returned to dentistry in Melbourne but it was not long before another heart attack killed him.

Siegmund died in a car accident in 1968, while travelling to visit Sophie in the Horsham Base Hospital. It was presumed he fell asleep at the wheel: his car left the road, hit a guide-post and turned back into the path of an oncoming truck. The townspeople of Murtoa, many of whom had been his patients all their lives, were deeply distressed by his death.

As they carved their names in the benchtop during lectures, perhaps Siegmund and Victor planned different lives to the ones they eventually lived, but for the township of Murtoa, and for Siegmund and Victor themselves, they were lives well spent.

The information for this article was kindly supplied by Conrad Rabl, son of Victor Rabl

A CHANCE VIEWING



NOLA HAMPTON AND CAMERON JEREMIAH, DECEMBER 2001



It is by happy chance that Nola Hampton happened to see James Guest's feature article on Julian Smith in her grandson's copy of the 2001 issue of *Chiron*. Nola was the model used by Julian Smith for *The Theatre Sister* [*Chiron*, vol4, no4, 2001, p50] and, on seeing the photograph in the journal, was prompted to write to us:

I was training as a nurse at RMH when this picture was taken ... I have a signed original which I treasure. The first photo Julian Smith took was a pair of (my) hands opening the autoclave [and] was on the front of the annual report.

After completing her schooling in 1941 Nola enrolled in medicine at the University of Melbourne. However, she turned eighteen in February 1942, the day Japan bombed Darwin, and immediately enlisted in the WAAAF. After serving as a wireless operator at Mt Gambier for just over two years, Nola received her discharge from the Air Force in order to train as a nurse at the Royal Melbourne Hospital. During her training she met Julian Smith who selected her to pose for a series of his photographs.

Nola now lives in retirement in Geelong and her grandson, Cameron Jeremiah, is in his final year in medicine at the University of Melbourne.

Invisible Invaders

SMALLPOX AND OTHER DISEASES IN ABORIGINAL AUSTRALIA 1780 - 1880

BY JUDY CAMPBELL

Melbourne University Press, 2002

Sbk, pp 266, illustrated, glossary, notes, bibliography, index
rrp \$49.45

IN SOMALIA, IN 1977, a centuries-long chain of transmission was broken when the last case of wild but mild smallpox was detected and contained. In Birmingham, on 11 September 1978, Janet Parker died of laboratory-acquired smallpox, after infecting her parents, the two very last cases. Although the public profile of smallpox faded fast, the virus was not yet dead. Arguments for retaining limited stocks of variola virus froze action to destroy smallpox in 1999. The stocks are supposed to be burnt in 2002.

Suddenly, in 2001, military and public health agencies, the media and the public, were talking about smallpox. Anthrax had started the conversations. The potential of anthrax as an agent of bio-terrorism is limited because anthrax does not spread directly from person-to-person. Smallpox does. The global population has increased fifty per cent since 1977. We now have mega-cities. Hardly anyone is immune to smallpox. Forty million people, most in the poorest, most crowded places in our world, are infected with the human immunodeficiency virus. We can imagine the disasters that smallpox released today might cause.

Judy Campbell's *Invisible Invaders*¹ summarises and interprets evidence of epidemic smallpox among Aboriginal Australians during the first century of permanent European colonisation. Smallpox is presented as a devastating scourge, initially unimaginable to its victims, that eradicated tribal groups, loosened the grip that survivors had on their land, generated myths, and left few survivors and a patchy historical record.

An epidemic ravaged the Aborigines of the Port Jackson region in 1789. Prolonged and widespread outbreaks spread through the Aboriginal populations of eastern Australia from the mid 1820s to the early 1830s. Further outbreaks affected the Aborigines of northern and western Australia in the 1860s. During these latter outbreaks Jennerian vaccination was provided to some of the more accessible Aborigines. Throughout this period, smallpox barely touched the European population of Australia—it was never endemic, and epidemics were tiny, focal and mostly due to cases imported by sea.²

The first Aboriginal outbreak remains the most contentious. Writers who knew smallpox saw the disease and described it as smallpox. The effect on the indigenous population was severe—appalling illness, helplessness and terror, flight, bodies and bones lying in the coves of Sydney Harbour. But the death toll is unclear, as is the size of the Aboriginal population before and after the epidemic. And the lack of illness among the Europeans is surprising, notwithstanding the prevalence of prior disease or variolation. One susceptible sailor (an American) caught smallpox and died.³

How did the 1789 epidemic start? Watkin Tench, writing in 1793, raised all the possibilities. Members of the first fleet probably encountered smallpox in England around the time they left on their long voyage. There were deaths on the voyage from various conditions, but apparently no smallpox. The last landfall, two months before Botany Bay, was Cape Town. Was smallpox picked up here? Could a chain of three or four cases been missed? Phillip denied this. Smallpox was not

reported on La Perouse's French ships that anchored in Botany Bay in early 1788. Was the 'variolous material' (virus-containing scabs) that was reportedly brought from England viable when it reached Australia? Was it used for preventive or malevolent purposes? Had Cook introduced wild disease nineteen years earlier? Was there a 'native pox'?

Campbell argues that this first recognised outbreak was the result of a chain of transmission that started among endemic smallpox cases in the Indonesian archipelago, reached northwestern Australia though one or more diseased trepang (sea-slug) fishermen, and then fizzed and spluttered across the continent over months or years, before descending the ridges of the Blue Mountains into Port Jackson.

The episodic introduction of smallpox in the course of organised visits from Macassan fishermen is plausible and supported by evidence. The case that infectious links then reached the Aborigines near the new European colony is, perhaps, less solid. The well-documented outbreaks across the interior during the nineteenth century demonstrate that smallpox could creep steadily across time and the vast Australian space. As wild smallpox was eradicated, slow outbreaks among twentieth century nomads proved that the virus could persist for a while in small, scattered populations. The evidence that might please an epidemiologist that there was a continuous web of transmission from the far northwest to the far southeast of the continent is, understandably, thin.

This hypothesis invites the recently invigorated mathematical modellers⁴ to test the feasibility of such temporal and geographic spread of smallpox in eighteenth century Australia, and estimate the demographic consequences. However, limited data, and the complexities and unknowns of population counts and structure, and social organisation and mixing, may frustrate sophisticated analyses.

Reconstructing the genesis of an outbreak, even a mundane modern outbreak of gastroenteritis, is often difficult. But 'the art of epidemiologic reasoning is to draw sensible conclusions from imperfect data'.⁵ As an epidemiologist, I assume history is similar. One may not agree with the strength of Campbell's conclusions about the competing explanations of the 1789 outbreak, but she provides a rich distillation of available primary and secondary accounts and explanations of epidemic smallpox in Australia. Other important diseases (tuberculosis, measles, venereal diseases, gastrointestinal and respiratory infections, nutritional deficiencies), and their effects, are covered comparatively thinly, or not at all. As a consequence, I found the analysis of the long-term depopulation of the Aboriginal peoples to be somewhat one-dimensional and unsatisfying.

There is much in *Invisible Invaders* to engage readers who are interested in Aboriginal and Australian history, or in the infectious diseases of colonisation and colonising societies. It is a powerful account of the Australian impact of a virus that we are yet to consign to the autoclave of history.

Mark Veitch

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- 4 Meltzer MI, Damon I, LeDuc JW, Millar JD. 'Modeling potential responses to smallpox as a bioterrorist weapon', *Emerging Infectious Diseases* 2001; 7(6): 959-69.
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Say Little, Do Much

NURSING, NUNS, AND HOSPITALS IN THE NINETEENTH CENTURY

BY SIOBAN NELSON

University of Pennsylvania Press, Philadelphia, 2001

Hbk, pp 240, illustrated

rrp US\$55

MEMBERS OF THE public who have a general understanding of nursing history will be familiar with the 'traditionalist' discourse of nursing history in which there is a linear progression through the nineteenth century from the incompetent, morally loose Sairey Gamp type nurse to the professionally trained, virtuous and admired nurse of post-Crimea Victorian Britain. In this view, the paramount catalyst for the transition from 'disreputable' to 'reputable' care is of course Florence Nightingale through her reform program of the 1860s.

Since the publication in 1980 of Celia Davies' *Rewriting Nursing History*, however, many historians have contributed to a re-examination of this nursing legacy. Even so, the 'rewriters' have generally neglected the contributions that the various religious orders made to the evolution of modern nursing.

Arguing the case for a more complex development of nursing and hospital care over a longer time frame, Sioban Nelson, in this important contribution to nursing historiography, sets out to re-examine the contribution that 'vowed women' have made to nursing and hospital care. She concludes that their contribution has been a very significant one. She draws on five case studies—three from North America, one from England and one from Australia—to argue her case: the contribution of the Daughters of Charity in the northeast of the United States; religious nursing in England within the context of the Nightingale reforms; the conflicts in healthcare between English and Irish influences in colonial Sydney; the frontier nursing models developed by French speaking nuns in Texas and in Quebec; and finally, the mutual achievements of Catholic and Protestant German nuns and deaconesses in immigrant areas of the United States. In doing so, she challenges the essential Englishness and secularism of much nursing history.

Australian readers will find chapter five particularly interesting. As Nelson notes, Australian nursing is usually considered to have begun in 1868 with the arrival of Lucy Osburn and her team of Nightingale-trained nurses in Sydney to take over the Sydney Infirmary. Yet the Irish Sisters of Charity had been nursing sick people in their homes since 1838 and with wide support from Catholics, Protestants and Jews set up St Vincent's Hospital in 1857. It was the remarkable achievement of the Sisters of Charity that St Vincent's Hospital Sydney became 'the only respectable hospital in the entire country for some decades'.

Nelson also produces strong evidence for the international impact of Lutheran vowed nurses through deaconess foundations in Germany, France, Switzerland and Scandinavia as well as within the German-speaking immigrant communities of North America.

Nelson concludes that not only did the religious sisterhoods profoundly influence the Nightingale reforms in nursing, but that their nursing focus was 'a product of a specific and time-limited set of contingencies—religious, cultural and political. These contingencies generated a remarkable field of possibility for communities of vowed women—one they did not pass by'.

This is a work of both history and nursing. We owe much to Sioban Nelson for her commitment to both disciplines.

Garry McLoughlin

Garry McLoughlin is a registered nurse and former Catholic priest.

He is a lecturer in the Department of Nursing and Midwifery at RMIT University, Melbourne



Don't Spit:

THE CONTROL OF TUBERCULOSIS IN VICTORIA

Medical History Museum,

Brownless Medical Library, University of Melbourne,

September 2001—January 2002

IN THE EARLY years of the twentieth century, most Australian adults had encountered *Mycobacterium tuberculosis*. Many died young of consumption. Around 1940, each year of clinical experience as a medical or nursing student in Australian teaching hospitals carried with it a twenty per cent chance of being newly infected with *M. tuberculosis*, manifest as a new positive Mantoux test.^{1,2} 'You'll be infected with TB as soon as you enter the hospital' went the threat. The cumulative risk of infection from the community and the hospital was such that most doctors and nurses did graduate infected. Progression to overt pulmonary tuberculosis was common, typically during training and early professional life. Some died. For many their career and life was diverted and shaped by a personal tussle with the tubercle bacillus.

'Don't Spit': *The control of tuberculosis* in Victoria starts with evidence from the Australian peak of the global tuberculosis pandemic. The first European buried in eastern Australian soil was Forby Sutherland, dead of consumption soon after the *Endeavour* reached Botany Bay. Later, in the nineteenth century, Australia was promoted as a restorative journey and climate for consumptives. Outbreaks afflicted miners on the goldfields and struck vulnerable Aboriginal populations. Eugenists warned consumptives not to breed. Sanatoria, mountain air, sunshine, sleep-outs and tonics provided rest, isolation, companionship, tans, and sometimes recovery. Tuberculin arrived as a therapeutic agent that failed, but remained as a diagnostic tool, even in an ophthalmic formulation. Boxes of surgical tools attest to the few blunt measures available for sick cases as late as the mid-twentieth century.

The symbiotic ecology of modern humans and *M. tuberculosis* depends on relatively intense transmission of infection from one human case to many others. Most infections of humans remain latent as an insignificant pulmonary scar and never cause illness or give rise to new cases. But a few do. *M. tuberculosis* in human populations thus sprawls as a pandemic across the centuries, by 'persistence, patience, and winning by waiting'.³

However, generation of new cases of infectious tuberculosis is inefficient. As few as one in twenty infections gives rise to a new case with the bacillary burden and circumstances sufficient to infect others. This is the crucial vulnerability of *M. tuberculosis*. Limit the number of new infections that arise from each infectious case of pulmonary tuberculosis to well under twenty, and the disease will decline. Prompt identification and isolation of cases, treatment to render cases non-infectious and spacious, adequately ventilated homes and workplaces all limit transmission.

Through the twentieth century, the incidence of tuberculous disease in Victoria tumbled from over 100, to six per 100 000 per year. By the 1990s, less than 1 percent of Australian-born teenagers were infected with tuberculosis.⁴ The risk of tuberculosis infection of young university healthcare students is now very low⁵, and tuberculosis disease is very rare among young doctors and nurses.

'Don't Spit': The Control of tuberculosis in Victoria illustrates the efforts that underlie successful control of tuberculosis; success shared by the rest of Australia and a few other rich countries.

We see vigorous responses from public health agencies—hygiene, disease surveillance, supervision of therapy and support during treatment and convalescence. The pocket spittoon with beautiful blue glass (perhaps to hide the stigma of haemoptysis) gave way to the grim 'DO NOT SPIT' tiles in Flinders Street Station. Striking posters, pamphlets and slogans promoted anti-tuberculosis campaigns. Anti-tuberculous chemotherapy, available since the late 1940s, brought cure. Cases who used to face prolonged confinement with shaky hope of recovery, were rendered non-infectious within a few weeks, cured in twelve months or less. Effective collaborations between charities, healthcare providers and supportive patient networks were established. All the sanatoria closed.

Through the twentieth century our migration policies attracted people from many countries with higher rates of tuberculosis than Australia. Accordingly, while the tuberculosis case notification rate has fallen, the proportion of cases of tuberculosis in Australia who were born overseas has increased steadily. Current local tuberculosis strategies therefore carefully attend to particular migrant populations, their circumstances and their cultural sensitivities, to ensure that good tuberculosis surveillance and control reaches them.

Our domestic priorities reflect, in small scale, the global tuberculosis emergency. The future of tuberculosis lies beyond our island. In 1990, tuberculosis was still the biggest single killer of fifteen to forty-four year old persons in the world. Every hour, thousands are newly infected with tuberculosis, 1000 people develop their first symptoms and 250 people die of tuberculosis.

Mark Veitch

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INNER SUBURBAN DWELLING, MELBOURNE 1936

Our Bodies, Our Babies

THE FORGOTTEN WOMEN'S MOVEMENT

BY KERREEN M REIGER

FORWARD BY SHEILA KITSINGER

Melbourne University Press, 2001

Sbk, pp 356, illustrated

rrp \$38.95

IN THIS CAREFULLY researched and pleasingly detailed account, Kerreen Reiger, Senior Lecturer in Sociology at LaTrobe University, Melbourne, describes the historical and political journey of Australian childbirth movements during the latter half of the twentieth century. During this period, through the efforts of 'activist mothers' and empathetic maternity care providers, both in Australia and overseas, a major shift occurred in the philosophy underlying childbirth—a shift which saw the initially prevailing paternalistic approach to childbirth give way to a more maternalistic focus.

Kerreen Reiger conducted over 100 formal interviews for her book. Half of these were with 'activist mothers' and half with health professionals, such as leading and influential midwives, obstetricians, paediatricians, anaesthetists and physiotherapists. The book also draws heavily upon the records and reminiscences of members of pioneering consumer groups such as the Nursing Mothers' Association of Australia and the Childbirth Education Association (Australia). Reiger not only presents a chronological account, but also a socio-political interpretation of the various shifts in maternity care philosophy and the associated power struggles and intrigues. The book is illustrated with archival photographs of many of the leading protagonists involved in the struggle to change approaches to childbirth and to ensure that women were informed about pregnancy, birth and breastfeeding and had the opportunity by right to exercise choice and control over their own maternity experiences. In all, Kerreen Reiger spent a decade researching and assembling the information for the work. The result is a fascinating and definitive account of the reformation of Australian maternity care from the 1950s through to the present.

An important theme explored throughout the book is the relationship between the childbirth movement and the broader women's movement that has had such a revolutionary impact in recent decades. Her thesis, as indicated in the book's subtitle, is that those involved with changing prevailing childbirth and breastfeeding management philosophies are not seen as mainstream participants within the history of feminism and the women's rights movement. This is an intriguing and stimulating assessment, and one that is likely to provoke debate in many academic seminar rooms.

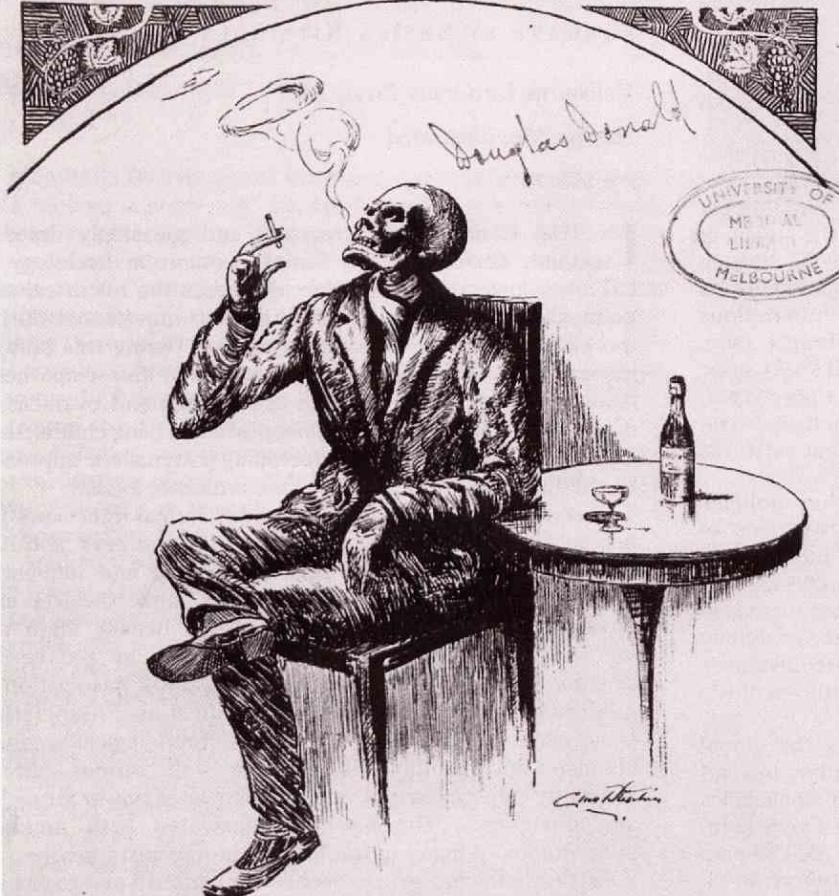
Kerreen Reiger's commitment, both as a mother and an academic, to the subject matter of her book is to be found on every one of its 336 pages. Her account of childbirth movements and the care of mothers and babies in Australia over the past five decades, is measured, balanced, meticulously researched, and yet it is also passionate and heartfelt.

All those with an interest in Australian maternity care and childbirth, whether as consumer, advocate, provider, researcher or commentator, will find Kerreen Reiger's book a fascinating and invaluable resource.

Shaun Brennecke

Department of Obstetrics & Gynaecology
The University of Melbourne

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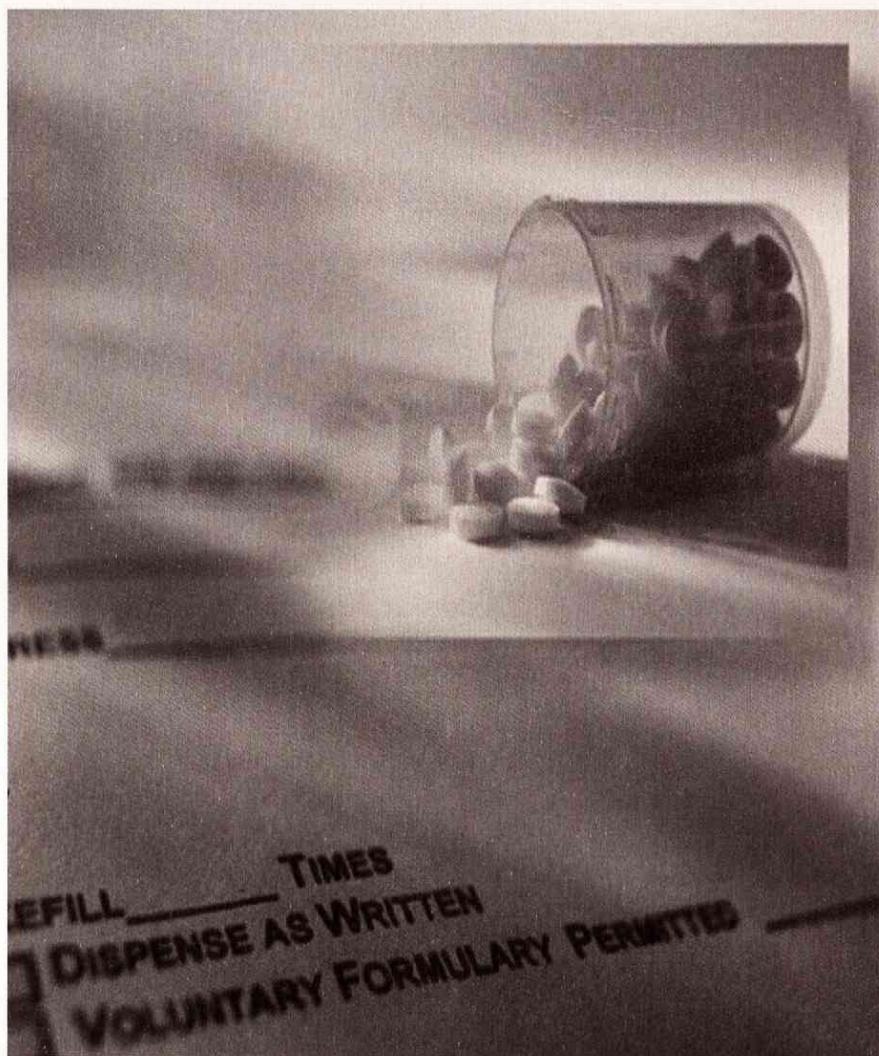
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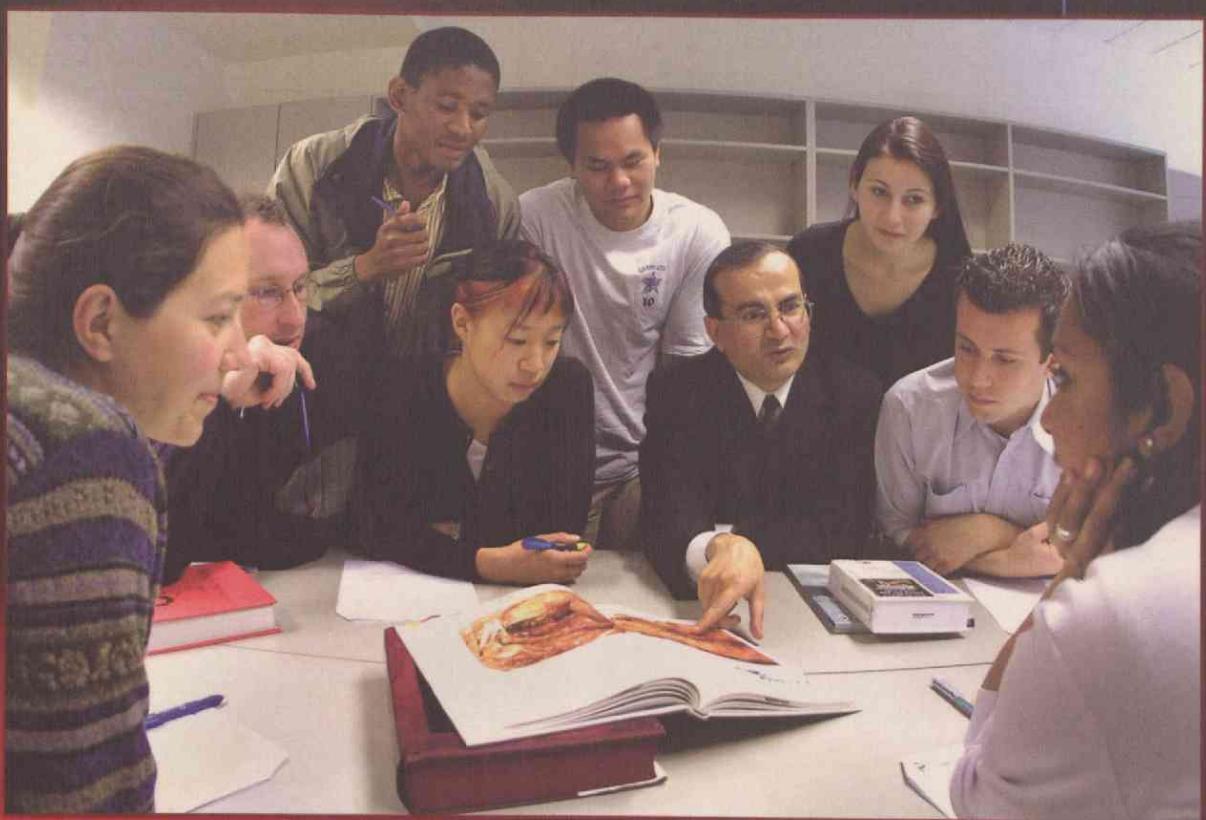
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