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## CHIRON

CHIRON THE CENTAUR, TEACHER OF MUSIC,  
MEDICINE AND HUNTING

VOL 5 No 2

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## ENTRY TO MEDICINE AND THE NELSON REFORMS

By Associate Professor Susan Elliott

Director, Education Unit, Faculty of Medicine, Dentistry and Health Sciences

**I**F YOU ARE feeling confused by changes to the selection of students into medicine, you are probably not alone. Federal government, university and School of Medicine initiatives have resulted in a process of unprecedented complexity. Students come from more diverse backgrounds than previously and there are many ways they can fund their course. Some changes, particularly the so-called Nelson higher education reforms, have attracted substantial media interest and led to student protest. Initiatives to improve access for disadvantaged and under-represented groups of students, including those from rural regions, have received less attention.

Governments of both persuasions have long grappled with issues of university funding and student access. In 1974, university fees were abolished to increase the participation in higher education of students from low income families. Fifteen years later, this aim had not been achieved and university students were still overwhelmingly from middle and high-income families. The federal Labor government argued that a fully publicly funded higher education system was shifting money from the 'poor' to the 'rich' and, in 1989, introduced the Higher Education Contribution Scheme (HECS). The HECS is open to citizens of Australia and New Zealand and to Australian permanent residents. Until now, the level of student contribution was set by government. For current full-time students there are three payment levels ranging from \$3768 a year for Level A courses, which include nursing and education, to \$6283 a year for Level C courses (medicine, law, dental science and veterinary science).

Changes to the HECS are central to the Nelson reforms. From 2005, universities have been given the discretionary power to charge up to twenty-five per cent more than the existing HECS levels in all courses except teaching and nursing. Not surprisingly, this has caused outrage amongst some students and campus protests have become common. Despite this, many universities, including Melbourne, Monash, Sydney and NSW, have voted to increase the level of student contribution by the full twenty-five per cent for most of their courses.

Those outside the tertiary sector may see this as a windfall for the universities, or simply as greed. Those within are well aware that government funding for universities fell by approximately twenty-six per cent over the last six years. As a result, there has been a gradual privatisation of our public universities, most apparent in the rise of fee-paying international and local students.

Places for local fee-paying undergraduate students started in 1998. The Nelson reforms will lead to substantial growth in the numbers of these students and will allow local fee-paying places in medicine for the first time, capped at ten per cent of places.

Much of the fee income is used to meet the shortfall in government income, but the University of Melbourne also plans to dedicate some of the funds to supporting equity placements. The university is establishing a new equity program, Access Melbourne, under which twenty per cent of all HECS places will be set aside for disadvantaged students. The university will fund 200 scholarships providing a HECS-exempt place and \$2000 a year. The program is aimed at improving the representation of Indigenous and rural students, and those from socially and economically



SUSAN ELLIOTT

disadvantaged backgrounds, and will cost approximately \$24 million over the next five years.

The federal government also has initiatives to address medical workforce shortages and encourage doctors to work in areas of greatest need. Twenty per cent of students in HECS medical places are bonded to work in a district of workforce shortage for a period of six years once they have completed their vocational training. About a third of these places are part of the Medical Rural Bonded Scholarship Scheme. These students have a HECS-exempt place and receive \$20 000 per year of their medical course. The remaining two thirds are part of the Bonded Medical Places Scheme. Students in this scheme pay the full HECS and do not receive a scholarship. Yet they are also bonded to work in an under-served region for six years post-

vocational training. There have been many vocal opponents of this scheme, claiming that school-leavers are too young to make a commitment that won't impact until they are in their thirties. Others are concerned that the scheme won't improve medical access as graduates will avoid their placement by leaving the country or buying themselves out of the obligation.

So how can local students gain a place in medicine at Melbourne? There are currently 194 HECS-funded places which are divided into 132 school-leaver and sixty-two graduate-entry places. Eleven of these places (eight school-leaver and three graduate-entry) are rural bonded scholarship places and twenty-six (eighteen school-leaver and eight graduate-entry) are for rural bonded (non-HECS exempt) students. Up to twenty per cent of places will be allocated to the Access Melbourne scheme. Finally, fee-paying places: eighty to ninety places for international students and, from 2005, up to twenty places for local students.

The result is a complex mix of students who will eventually graduate in medicine. The School of Medicine is working with other Australian medical schools to conduct a systematic study of career outcomes to determine the impact of these initiatives.

### COVER STORY

**Front:** These brightly coloured plaster models are used to map the nerve supply and lymph drainage territories of the skin of the trunk. Pictured with the models, on display in the new Harry Brookes Allen Museum of Anatomy and Pathology, are Bryar McPhee (top) and (middle, L to R) Sian McConnell, Dr Ranir Shaynor (anatomy demonstrator) and Joanne Beilby. The images are incorporated in the award winning multimedia program *An@tomedia* ([www.anatomeia.com](http://www.anatomeia.com)), developed by Dr Norm Eizenberg, Dr Chris Briggs, Ms Priscilla Barker and Dr Ivica Grkovic, from the Department of Anatomy and Cell Biology.

**Back:** The three dimensional structure of different regions of the Alzheimer's disease amyloid precursor protein. These structures provide detailed insights into the important role of this molecule in Alzheimer's disease.

## WHO PAYS FOR LUNCH?

### Ethics Committees and Conflict of Interest

25 July 2003

**Convener, Professor Graham Brown**

*James Stewart Professor of Medicine and Head, Department of Medicine,  
The Royal Melbourne Hospital and Western Hospital, University of Melbourne*

#### Introduction

GRAHAM BROWN

**C**LINICAL ACADEMICS IN universities and hospitals have been encouraged to form links with the pharmaceutical industry, and with scientists working in laboratories, to translate research findings for patient benefit, and to provide commercial benefit for Australia. Commonwealth and state authorities provide funding for research initiatives in the belief that this will benefit economic development in Australia.

Our university has benefited from these strategic alliances in developing our research portfolio and our productivity. With the support of the Australian Government, cooperative research centres have been established to encourage collaboration between academia and industry, and we hope to benefit even more through major initiatives such as Bio21.

Increasing collaboration will undoubtedly bring enormous benefits, but it is essential that we do not compromise scientific integrity and academic independence and, most importantly, in studies involving human subjects, that we respect at all times the rights of participants. Trial participants must also be made aware of all issues relevant to the conduct of the science, and any issues that may affect their participation or continuation in clinical trials.

Clinical research can now be performed outside academic institutions, in contract research organisations that may not be directly linked to academic departments with the checks and balances that academic associations provide. Furthermore, there are allegations that some clinical trials of 'look-alike drugs' bring benefit only to researchers and companies as their main aim is to increase the profile of the new drug product.

Pharmaceutical companies have received considerable criticism for their approach to product marketing, but in recent studies they have been very keen to ensure that data obtained is of the highest integrity and is satisfactory to regulatory bodies throughout the world. Editors of prestigious journals can play an important role in quality control for prevention of conflict of interest because academic researchers place high priority on publication in such journals. Editors insist on explicit statements from authors that data has been managed independently and that, at all times, the researchers retained the right to publish positive or negative results without delay or impediment. Companies have even engaged bioethicists to assess codes of practice, but controversy within the bioethics profession has arisen because conflict of interest could occur in cases where ethicists have been paid for the provision of such advice.

Review boards of various institutions are being overwhelmed by the paperwork required for each monthly meeting and are examining international practices in which clinical trial projects are assessed by funded research review boards. The difficulty of obtaining truly independent advice regarding conduct of trials



GRAHAM BROWN

could be further compromised if individuals on the committee receive payment for their advice.

For this seminar we have gathered together a panel of experts who will examine a series of case studies as a means of identifying key issues of conflict for researchers, ethics committee members, universities, hospitals or sponsoring institutions. Committee members need to decide for themselves whether personal, scientific or financial issues present them with a conflict of interest and then decide what degree of association, for them or the investigator, causes conflict of interest. Most importantly, they should seize opportunities to prevent conflict of interest arising before or during a study submission or execution. If conflict of interest arises, mechanisms for dealing with it at a committee and project level need to be considered in light of the recognition that truly

independent expert opinion is hard to obtain, and that, in many cases, research can only be performed with the support of the pharmaceutical companies introducing the new product.

#### Seminar Participants

##### Ethics Committee Panel

Professor Richard Fox, Director of Clinical Haematology and Medical Oncology, Royal Melbourne Hospital

Associate Professor Colin Thompson,  
Consultant in Health Ethics, Health Ethics Section,  
National Health and Medical Research Council

Reverend Dr Rufus Black, Ethicist and Theologian

Professor Loane Skene, Professor of Law and Director of Studies, Health and Medical Law, Faculty of Law; Adjunct Professor, Centre for the Study of Health and Society, University of Melbourne

Dr Tilman Ruff, Director of Research and Development and Medical Affairs, GlaxoSmithKline Biologicals

Mr Terry Lane, Broadcaster and Writer

##### Expert Commentators

Dr Lynn Gillam, Lecturer in Ethics, Centre for the Study of Health and Society, School of Population Health; Research Fellow, Centre for Applied Philosophy and Public Ethics, University of Melbourne

Dr Abe Rubinfeld, Deputy Director of Respiratory Medicine, Royal Melbourne Hospital

Do procedures within the University of Melbourne and our neighbouring institutions protect the rights of patients at all times? What mechanisms can we use to identify and deal with conflict of interest and to inform trial participants of possible conflicts of interest?

Finally, what opportunities exist for educating students, practitioners and clinical researchers about the changing ethical standards in society and in medical and research practice that must be met, in an open and transparent way, to ensure that conflict of interest does not result in deleterious outcomes for our subjects.

The following papers by Brenda Masters, who was a member of the seminar audience, and by Lynn Gillam, one of our expert commentators at the seminar, give two interpretations of the proceedings. An edited and abridged transcript of the seminar is available at [www.mdhs.unimelb.edu.au/news/deanslecture/2003.html](http://www.mdhs.unimelb.edu.au/news/deanslecture/2003.html)

## An ethical perspective on conflicts of interest in research

LYNN GILLAM

Centre for the Study of Health and Society, School of Population Health, University of Melbourne

### Imagine this scenario:

**D**R BROWN IS a member of a hospital human research ethics committee (HREC)—one of the three people on the committee filling the role of scientific researcher. He is a respiratory physician at the hospital and also has an appointment at the associated university. In his spare time he is a paid consultant to PharmaCompany, which manufactures some of the major asthma medications, and has a significant holding of their shares. At today's meeting, the committee is to consider a clinical trial of a new asthma drug, sponsored by rival manufacturer Medimarket. The chief investigator is Dr Bronchus, the head of Dr Brown's university department, who will shortly be reviewing his application for promotion. Dr Bronchus, in her spare time, also happens to be coach of Dr Brown's daughter's netball team—which used to be a happy arrangement, until his daughter was suddenly dropped from the team.

Dr Brown is pondering these matters as the discussion of the application begins. One of the lay members, Mr Nextdoor, is very much in favour of the trial, but this is no surprise since his nephew is asthmatic and has suffered serious side-effects from the standard PharmaCompany drug (this has been aired at length in previous meetings). Dr Brown wonders whether Mr Nextdoor should be involved in the discussion at all, seeing as he is so biased. But the others on the committee don't seem bothered by this. One of the other doctors, who is well known by all on the committee as Dr Bronchus's golf partner, is expatiating on the importance and international prestige of the trial and the wonderful reputation of Dr Bronchus. Then the ethicist (who doesn't belong to any category and really shouldn't be there at all, in Dr Brown's view) cuts across this with



LYNN GILLAM

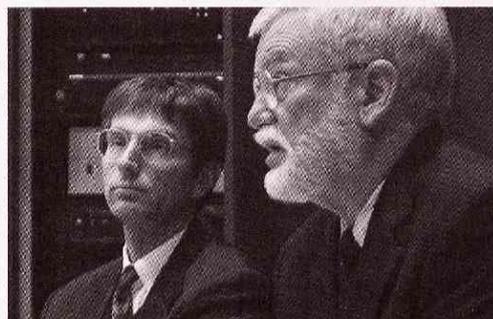
who has caused trouble for the hospital in the past and now wants to come and do some flaky ethno-something in the labour ward, of all places.

Are there some conflicts of interest here? And how should they be handled? These are not just administrative questions, but ethical ones, and answering them is not so easy. It requires quite a nuanced understanding of what constitutes a conflict of interest, what the essence of the problem with such conflicts is, and how, if at all, they can be managed in an ethically acceptable manner. Should the whole committee just pack up and go home now, or is there some hope?

It turns out to be quite difficult to give a precise definition of what counts as a conflict of interest, even though we all feel that we know one when we see one. But being able to define it is crucial, since it is on just those occasions when one has conflict of interest oneself that this diagnostic gaze can fail. Broadly speaking, I suggest that a conflict of interest occurs when a person acting in a public or professional role has personal interests which jeopardise her ability to fulfil the obligations of that role. But this still needs some qualification and explanation. 'Personal interests' is deliberately vague, because it must be allowed to include a range of different sorts of interests. It clearly encompasses financial interests, which occur, for example, when

someone owns shares in a company and stands to gain money from the success of its activities. But, as became very clear during the panel discussion at the seminar, all sorts of other matters can count as interests in this sense. People have interests in maintaining personal and professional relationships, in the well-being and happiness of their families, in the advancement of their own careers, and so on. Given the right set of circumstances, all these sorts of interests may come into conflict with the interests that a person is required to serve as part of their job or role.

In our scenario, there are certainly lots of sets of interests around—some financial, others more interpersonal. But to determine whether there are conflicts of interest, we need to look at whether these interests potentially jeopardise people's ability to fulfil their professional or role obligations. Let's consider Dr Brown. What are his obligations as an ethics committee member? This is not a matter commonly discussed, but presumably the main obligation is along the lines of evaluating each application thoroughly, in a fair and objective manner, according to the provisions of the *National Statement on Ethical Conduct in Research Involving Humans*—in short,



TILMAN RUFF (LEFT)

*'Incentives that make participation dependent on the outcomes of the research, or that offer inducements to recruit or rewards for certain numbers of patients, would not be regarded as ethical ...'*

TERRY LANE (RIGHT)

*'The suspicion always is that the person whose research is being funded by a pharmaceutical company has a considerable interest to find what it is that the pharmaceutical company wants him to find ...'*

to make a decision about the ethical acceptability of the project, based on the ethical issues alone. But Dr Brown's financial interest in the success of PharmaCompany potentially conflicts with this—it gives him a motivation to reject the application for reasons not related to the ethical acceptability of the proposed clinical trial. Likewise, his professional connection with Dr Bronchus provides a non-ethical reason to approve the trial, while his personal connection perhaps gives him a reason not to (if he is disposed to avenge his daughter's omission from the netball team). These are all *potential* conflicts of interest.

That is the next thing—in one way, *potential* conflicts of interest only matter if they become *actual* conflicts of interest. If Dr Brown is in fact not influenced by all his potentially competing interests, and makes an impartial judgment based simply on the facts and the relevant ethical principles, then there is no problem. It is when his judgment *is* influenced that things go wrong—he fails to fulfil his own obligations, the other members of the committee are misled (thinking he is making an impartial judgment when he is not), and Dr Bronchus and her sponsors are perhaps treated unfairly, if their application is wrongly delayed or rejected, with the possible result that asthma sufferers miss out on a medication that would have been beneficial.

But there are two complications. The first is that of ascertaining whether the competing interests have actually come into play or not. Dr Brown is the only one who can know, and even he may not be entirely clear about the influences on his decision, even if he were willing to say so. The person with a potential conflict of interest is often the least reliable judge of whether there has been an actual conflict. This means that, in order to be on the safe side, it is *potential* rather than actual conflicts of interests that we need to worry about. The second complication is that perceptions also matter in relation to conflict of interest—even if there is no actual conflict of interest in Dr Brown's judgment, it may well appear to various interested parties that there has been. Perceived conflict of interest is a problem because it undermines trust in the ethics committee and the process of ethics review.

Exactly the same sorts of problems arise in relation to Dr Bronchus. She has a potential conflict of interest between her obligations as a doctor to her patients (to act in their best interests and respect their autonomy), and her financial and career-advancement interests in recruiting as many patients as possible into the clinical trial. Again, even if her judgment or behaviour is not actually compromised by the competing interests, perceptions matter. If her colleagues, patients or the general public believe that she has been influenced by financial or personal considerations, then the integrity of the research process is called into question, and public trust and willingness to participate in research may be undermined.

So the task facing ethics committees is two-fold: to consider how to deal with potential conflicts of interest in relation to their own members, and in relation to researchers and their projects. One very common way of dealing with conflict of interest is to require it to be declared, and often then have the person stand aside from decision-making in the ethics committee. Declaration is an important step, but there needs to be a systematic process for identifying potential conflicts, which does not leave it too much to the judgment or initiative of individuals to make their own decisions on this. As I noted before, we are not well placed to make impartial, well-considered judgments about whether we ourselves have a conflict of interest. Withdrawing from



RUFUS BLACK

*'... the final guarantor of ethical integrity is not a legalistic tick-the-box or a committee saying yes or no but actually a culture among professional colleagues ...'*

decision-making is also not entirely straightforward. As our scenario shows, if every ethics committee member with a potential conflict of interest withdrew from the discussion of a project, there might be no-one left in the room to make a decision! Some judgment needs to be made about which sorts of conflict of interest require withdrawal, which need simply be made known to the rest of the committee, and which require some other sort of action. Other actions may include greater clarity about the reasons for a decision, a change in decision-making process (perhaps secret ballot rather than 'consensus' or show of hands, more thorough documentation of reasons for a decision, or independent review of a decision by another person or committee).

Where researchers have potential conflicts of interest, ethics committees should consider various ways in which the design of the research could be changed to create some distance between the competing interests. For example, perhaps Dr Bronchus should not recruit her patients herself, but have someone else do so; or she might organise to have the capitation fee paid to a general departmental fund, rather than to her personally. Discussing such issues with researchers may be difficult and uncomfortable, since it seems to imply that their honesty, integrity or professional standards are suspect. This is where the distinction between actual, potential and perceived conflict of interest is crucial. Suggesting or requiring these sorts of measures does not mean that the committee believes a researcher would knowingly succumb to the influence of conflicting interests—simply that perceptions of conflict of interest matter, and should be avoided, and that it is sensible to take precautions against awkward situations arising.

## A legal perspective on issues raised by the seminar 'Who pays for lunch?'

BRENDA MASTERS

Research Fellow, Melbourne Law School,  
University of Melbourne

**M**ANY THINGS ARE decided over lunch, but what happens if it's the lunch that makes you decide? The seminar 'Who pays for lunch?' suggested several scenarios where the prospect of a nice lunch, selection of your child on the netball team, or an overseas trip could create ethical and legal dilemmas concerning conflict of interest. Dr Lynn Gillam has discussed the ethical questions surrounding conflicts of interest which may arise when seeking approval from a human research ethics committee (HREC) for a research proposal. I will look at the legal issues and discuss the relevant obligations and responsibilities of HRECs and others in research.

The responsibilities of ethics committees are set in the *National Statement on Ethical Conduct in Research Involving Humans*.<sup>1</sup> The *National Statement* was issued by the NHMRC to fulfil its obligation to provide guidelines for medical research on humans.<sup>2</sup> It provides guidance for researchers, sponsors, institutions and HRECs, and specifically refers to conflict of interest at several points. However, it does not define 'conflict of interest' or 'personal interest', both of which are defined in Dr Gillam's paper.

## Human research ethics committees

An institution or organisation undertaking research involving humans must establish an HREC. All research proposals must be considered by the HREC of the institution or organisation where or for which the research will be undertaken. The HREC may approve, recommend amendment to, or reject a research proposal. As the main role of the HREC is to protect the participants in human research, the HREC has an obligation to avoid potential or actual conflicts of interest when considering and assessing research proposals.

### Financial conflicts

An HREC has to take into account 'those aspects of the budgets of clinical trials which raise ethical issues'.<sup>3</sup> The HREC would therefore have to consider whether payments may influence the trial's recruitment process. For example, could the prospect of an investigators' meeting at an exotic location influence the doctor to pressure a patient to consent to participate in the trial?<sup>4</sup> Are there payments or arrangements that may influence the findings, such as a researcher also acting as a part-time consultant to the sponsor? Will the relevant aspects of the budget, such as who is funding the trial, be disclosed to participants, and to what extent? Does the research proposal have a budget that provides sufficient funding to complete the trial?

The HREC must consider 'capitation fees, payments to researchers, institutions or organisations involved in the research, current and consequential institutional or organisational costs and costs which may be incurred by participants' before approving a research proposal.

### Researchers

As Dr Gillam points out, the task of an HREC is two fold: to deal with potential conflicts of their own members, as well as potential conflicts of interest in research proposals. Hence, a researcher is under an obligation to disclose information that will assist the HREC to make an ethical assessment. A researcher must disclose 'the amount and sources or potential sources of funding for the research and must declare any affiliation or financial interest when proposing and when reporting the research'.<sup>5</sup> A condition of any approval is that a researcher is required to report any changes to the original proposal that may occur after approval is received, and which may affect the research's ethical approval.<sup>6</sup>

The HREC must also have procedures in place to handle complaints or concerns about the way approved research is being conducted.<sup>7</sup> Complaints may be made by research participants or from within the institution or organisation. As a result of a complaint, an HREC may suspend or withdraw approval of a research project.<sup>8</sup> This would require the suspension or cessation of the research, as research must only be undertaken with HREC approval.<sup>9</sup>

If a researcher has a complaint about the way in which the HREC assessed their proposal, the researcher may make a complaint.<sup>10</sup>



RICHARD FOX

*'I think someone has calculated that Victoria has more ethics committees in medical research per capita than virtually anywhere else in the world. The amount of work that has to go into making submissions now ... and the duplication of effort that goes on is absolutely mind-boggling.'*

## Human research ethics committee members

HREC members are also obliged to monitor themselves for potential conflicts of interest.

The *National Statement* requires 'that no member of the committee adjudicates on research in which that member has any conflict of interest including any personal involvement or participation in the research, any financial interest in the outcome or any involvement in competing research'.<sup>11</sup> The obvious example is when an HREC member is an employee of the sponsor of the proposed trial. Dr Gillam has discussed the more difficult issue of perceived conflicts and suggested ways in which an HREC may avoid such conflict.

HRECs are also obliged, when seeking the assistance of experts in considering a research proposal, to ensure that the expert does not have a conflict of interest,<sup>12</sup> by requiring the expert to declare any potential or actual conflicts of interest.

Any conflict of interest problem, or potential problem, should be resolved before the research proposal receives approval.

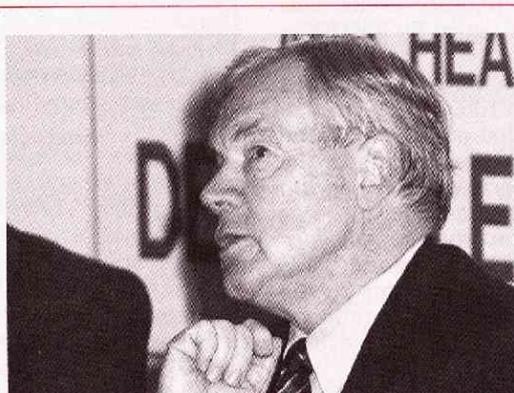
However, the seminar also raised several issues that may occur after ethics approval has been received, or after the research has commenced. The legal issues that were raised did not always stem from conflicts of interest, but are issues related to human research and are considered below.

### Information

Before approving a research proposal, an HREC must be satisfied that information collected and stored by a researcher complies with relevant Commonwealth or state legislation.<sup>13</sup>

The *Privacy Act 1988* (Cth) covers both private and public institutions, and incorporates the Information Privacy Principles (IPPs), which apply to federal government agencies, and the National Privacy Principles (NPPs), which apply to private organisations and individuals. The IPPs and NPPs deal with the manner and purpose of collecting information, storage and security of, access to, alteration of, and disclosure of information. The IPPs provide the standard which a research proposal should meet before receiving HREC approval,<sup>14</sup> regardless of how the proposal is funded.

Section 95 of the Privacy Act allows for an exception to the IPPs in certain circumstances. An IPP may be breached as part of medical research, as long as the breach is in accordance with guidelines issued by the NHMRC (see 'guidelines under section 95 of the *Privacy Act 1988*'<sup>15</sup>) and the research in which the breach will occur has been approved by an HREC. The research must have public interest considerations which outweigh the importance of complying with the IPPs. The guidelines provide the HREC with a list of matters which should be taken into consideration when assessing an application involving a breach of an IPP,<sup>16</sup> such as the contribution



COLIN THOMPSON

*'... one of the concerns is that the opinions of those connected with manufacturers or marketers are just simply less reliable, either in fact or in perception.'*

the research will make to the understanding of a disease, community benefits and the financial cost of not undertaking the research.

In Victoria, medical records are covered by the *Information Privacy Act 2000* (Vic) (public institutions) and *Health Records Act 2001* (Vic) (public and private institutions). The *Privacy Act 1988* (Cth) applies to Commonwealth-run health facilities located in Victoria.

### Informed consent

A trial participant must give informed consent before taking part in a trial.<sup>17</sup> A patient can only give informed consent when they know the material risks<sup>18</sup> of the treatment or trial.

Besides the obligation to comply with NHMRC guidelines, if a participant in a trial, especially a non-therapeutic trial, is likely to attach significance to the financial involvement of a doctor or researcher in a trial, there is an obligation to disclose that fact to the participant.

There are certain types of research where consent is not required, and they are specified in the *National Statement*.<sup>19</sup> Different obligations apply, but HREC approval is still required.

### Adverse finding

What are the duties to participants in a trial when the trial reveals unexpected results, or adverse events occur?

The case of Canadian researcher Dr Nancy Olivieri was discussed. Dr Olivieri was conducting research sponsored by drug company, Apotex Inc. During the clinical trials that Dr Olivieri was undertaking, she discovered, and reported to trial participants, risks associated with the drug being tested. This was against the wishes of the sponsoring drug company. The *Report of the Committee of Inquiry on the Case Involving Dr Nancy Olivieri, the Hospital for Sick Children, the University of Toronto, and Apotex Inc*<sup>20</sup> recommends that researchers never sign contracts that restrict their ability to publish results. This is also good advice for research contracts signed by Australian researchers.

What would happen if adverse or unexpected events occurred in research that had been approved by an HREC? The *National Statement* requires research to be suspended or modified if the risks are found to be disproportionate to the benefits of the research to a participant,<sup>21</sup> and that any serious or unexpected adverse effects to participants be reported immediately.<sup>22</sup>

The Therapeutic Goods Administration *Note for guidance on Good Clinical Practice annotated with TGA comments*<sup>23</sup> also requires researchers to report serious adverse events to the sponsor immediately, or the sponsor to notify institutions and organisations should they become aware of any adverse events.<sup>24</sup>

Also, if a trial is stopped prematurely the participants should be promptly notified and appropriate therapy and follow up provided.<sup>25</sup>

### Conclusion

It is the responsibility of researchers, HREC members and experts to identify and declare potential and actual conflicts of interest and, where necessary, pack their own lunch.



ABE RUBINFELD

'... the scientific construction of clinical trials nowadays is such that it tries to eliminate as much bias as possible, both from people evaluating the trial and the people recruiting patients.'

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- 3 *National Statement* at para 12.6
- 4 *Ibid.*
- 5 *Id* para 2.21
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- 7 *Id* para 2.39
- 8 *Id* para 2.44
- 9 *Id* para 2.45
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- 12 *Id* para 2.19
- 13 *Id* para 18.1
- 14 *Id* para 18.2
- 15 National Health and Medical Research Council, *Guidelines under section 95 of the Privacy Act 1988*, Canberra, 2000, available at <http://www.health.gov.au/nhmrc/publications/pdf/e26.pdf>
- 16 *At* para 3.3
- 17 *National Statement* at para 1.7
- 18 '[A] risk is material if, in the circumstances of the particular case, a reasonable person in the patient's position, if warned of the risk, would be likely to attach significance to it or if the medical practitioner is or should reasonably be aware that the particular patient, if warned of the risk, would be likely to attach significance to it.' *Rogers v Whitaker* (1992) 109 ALR 625 at 634
- 19 *National Statement* at paras 6.9, 14.4, 15.8
- 20 A summary of the facts and copy of the report can be found at <http://www.caut.ca/english/issues/acadfreedom/olivieri.asp>
- 21 *National Statement* at para 1.17
- 22 *Id* para 2.37
- 23 *Note for guidance on Good Clinical Practice annotated with TGA comments*, Therapeutic Goods Administration, Canberra, 2000, (see <http://www.health.gov.au/tga/docs/pdf/euguide/ich13595.pdf>) at para 4.11
- 24 *Id* para 5.16
- 25 *Id* para 4.12

## 2004 DEAN'S LECTURE SERIES—SEMINAR

### What is a Question of Ethics and Who Decides?

Friday 23 July 2004, 2.00pm–5.00pm

**Convener:** Professor Graham Brown

*James Stewart Professor of Medicine and Head,  
Department of Medicine, Royal Melbourne and Western Hospitals,  
The University of Melbourne*

#### With

Professor Kerry Breen  
*Chairperson, NHMRC Australian Health Ethics Committee*

Dr Rufus Black  
*Ethicist and theologian*

Professor Alan Coates  
*Chief Executive Officer, Cancer Council of Australia*

Professor Tony Costello  
*Head of Urology, Royal Melbourne Hospital*

Professor Richard Fox  
*Director, Clinical Haematology and Medical Oncology,  
Melbourne Health*

Dr Lynn Gillam  
*Lecturer in Health Ethics, Centre for the Study of Health  
and Society; Research Fellow, Centre for Applied Philosophy  
and Public Ethics, The University of Melbourne*

Dr Amjad Hussain  
*General practitioner*

Professor Paul Komesaroff  
*Director, Monash Centre for the Study of Ethics  
in Medicine and Society*

Dr Angela Watt  
*Manager, Research Directorate, Melbourne Health*

## SIR JOHN ECCLES CENTENARY LECTURE

18 March 2003

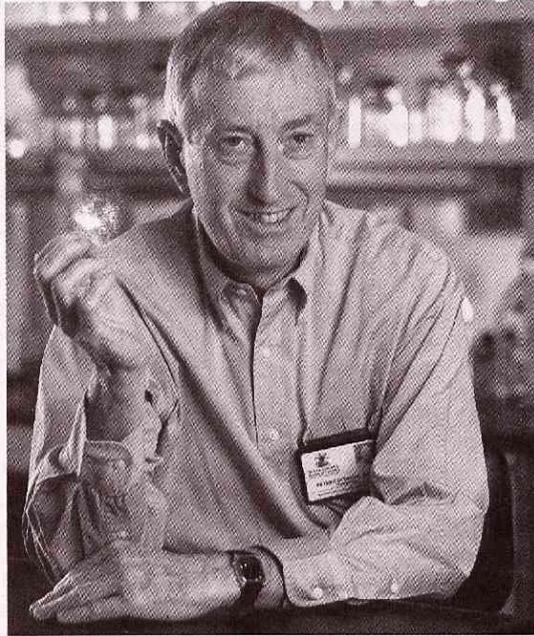
## ON THE NOSE

### Shared Themes for the Sensory and Immune Self

By Professor Peter C Doherty AC

*Laureate Professor, Department of Microbiology and Immunology*

*The immune system and the central nervous system operate in very different ways, but the dual use of the major histocompatibility complex for CD8<sup>+</sup> T cell monitoring and pheromone presentation indicates some commonalities exist.*



PETER DOHERTY

**E**ARLIER LAST YEAR I was asked to give the Sir John Eccles Centenary Lecture at the University of Melbourne. Eccles, who died in 1997, was awarded the 1963 Nobel Prize for Physiology or Medicine with Andrew Huxley and Alan Hodgkin: 'For their discoveries concerning the ionic mechanism involved in the peripheral and central portions of the nerve cell membrane'. He did his seminal experiments at the Australian National University, and is regarded as the 'grand old man' of Australian neurophysiology. What could I say that might be of interest to the neuroscience community? An obvious possibility was to attempt a synthesis linking at least some characteristics of the central nervous system (CNS) and the immune system.

#### Specificity and complexity

Higher vertebrates are large, complicated, multicellular, multi-organ systems that have evolved to live in a wide and dangerous world while maintaining basic functional integrity and serving as a microenvironment for simpler life forms, such as worms, fungi, bacteria and viruses. Maintaining self-integrity depends on two great complex systems that operate to recognise, and to deal differentially with, specific challenges. The CNS and its receptors, processes (the nerves) and effector arm (the musculature) are familiar to every human being. The immune system, however, functions below the level of consciousness, although immunity shares with the CNS the capacity for specific responses to an almost infinite diversity of possible inputs and threats.

The CNS can be considered to operate in 'solid phase' through an enormous spectrum of interconnectivity, something like a computer or, perhaps, a set of networked computers. The stereotypical view of the brain as the 'central processing unit' of the CNS is now under debate<sup>1</sup>, but it is sufficient for the purpose of the current discussion. The immune system functions in 'liquid phase', with the individual cellular elements dispersing through the blood to every possible anatomical site. So-called 'resting' CD8<sup>+</sup> memory T cells recirculate continuously from blood to tissue to lymph. Responding T cells are remote in space and time from their central processing unit, the thymus.

The key contrast between the CNS and the immune system thus rests in the idea of stability versus mobility. Nervous system networks operate through the processes of the nerve cells themselves, the dendrites that receive chemical signals through synaptic junctions with other neurons, and the axons, which carry those signals forward by a process of sequential

electrical depolarisation. The axons can extend for enormous distances; a key question in neurobiology is how they find their way through the brain to their intended target. Research since the early 1990s has shown that developing axons and dendrites are tipped with highly motile growth cones. At least one axonal guidance pathway<sup>2</sup>, which involves repulsion by the secreted protein Slit of the receptor Robo, may also be important in modifying leukocyte chemotaxis<sup>3</sup>. The sequential development of T cells from thymic precursors to immune effectors is characterised by movement and, ultimately, by concentration at sites of pathology and death. Such strategies are clearly unacceptable for the CNS. The challenge of understanding homeostasis is very different for the dispersed immune system and the anatomically stable CNS.

#### The sensory and immune self

The nature of self, or rather the necessity for self-non-self discrimination, has long been an obsession for immunologists. The question was first raised by Paul Ehrlich with his speculations concerning 'horror autotoxicus', and was focused by FM Burnet when he formulated the concept of immunological tolerance. Since the 1960s, 'self-non-self' has been a mantra for immunologists. The discovery of major histocompatibility complex (MHC)-restricted, virus-specific 'killer' T cell function in the mid-1970s further refined our thoughts on this issue<sup>4</sup>. It was clear that immune surveillance of self by CD8<sup>+</sup> T cells is mediated through monitoring of what are now called the conventional MHC class I glycoproteins.

*Because the desirability of maintaining self-integrity is so obvious, questions about the nature of self are not generally at the forefront for experimental neurobiologists.*

The idea of 'self' for neuroscientists has been much more focused on consciousness, psychological well-being and so forth. Because the desirability of maintaining self-integrity is so obvious, questions about the nature of self are not generally at the forefront for experimental neurobiologists. Although immunology and neuroscience share terms like 'recognition', 'response' and 'memory', most of these words describe mechanisms that are, operationally, very different in the immune system and CNS.

At the beginning of the 1980s we began to see papers emerging from the New York laboratory of EA (Ted) Boyse,

which demonstrated that female mice were apparently using the sense of smell to mate preferentially with MHC class I-different males<sup>5</sup>. Lewis Thomas, explaining the enormous polymorphism of the MHC class I alleles, first suggested this idea in the early 1970s. Others have now shown that 'sniffer' rats can be trained to distinguish human MHC class I 'odour types' in urine<sup>6</sup>. Continued analysis, particularly from the laboratories of Boyse and Wayne Potts, mapped the effect to mutant MHC class I molecules<sup>7,8</sup> and demonstrated that odour type is both dependent on the expression of  $\beta_2$ -microglobulin<sup>9</sup> and already established at birth<sup>10</sup>.

*Very simplistically, there are approximately five million olfactory sensory neurons, each of which expresses only one odorant receptor.*

The nature of CNS olfactory pathways has been defined with considerable clarity by Linda Buck, Richard Axel and their colleagues<sup>11,12</sup>. Very simplistically, there are approximately five million olfactory sensory neurons, each of which expresses only one odorant receptor. The odorant receptors constitute extraordinarily diverse families of seven-transmembrane proteins that map to all except the male chromosome. Some are located within the MHC, although no particular importance has been attached to this.

When we react to Roquefort cheese, we are responding to a particular spectrum of cheese-generated volatile chemicals that can be captured by a range of different odorant receptors expressed on presynaptic neurons in the nasal mucosa. Binding the particular spectrum of odorants causes a range of neurons to fire. The signals from at least some of the 5000 nerve cells expressing the same odorant receptor are then transmitted to second-order neurons in about 2000 spherical structures, the glomeruli, which are located in the olfactory bulb. Each glomerulus cumulates the input from only one type of sensory neuron. The information from the different glomeruli is relayed further to the olfactory cortex. This leads to the development of a combinatorial code, which is relayed to diverse regions of the higher brain where different types of signals are further integrated. Imaging studies show that individual odours induce spatially distinct, stereotyped patterns of response<sup>13,14</sup>. The net consequence is the registration of a particular profile, such as the smell of Roquefort cheese, which impinges on our consciousness.

*We are all familiar with the fact that sniffing is much more important for dogs than for us, though we may under-rate the extent to which smell influences our behaviour.*

Humans and mice have 1000 or so odorant receptor genes, although many (60% in man, 20% in mouse) are pseudogenes<sup>15</sup>. Comparative studies within primate species suggest that the number of functional odorant receptors decreased over twenty-five million years of evolution with the acquisition of tricolour vision<sup>16</sup>. We are all familiar with the fact that sniffing is much more important for dogs than for us, though we may under-rate the extent to which smell influences our behaviour<sup>17</sup>.

The odours that influence sexual attraction (pheromones) register more at the level of the subconscious. Pheromone-based recognition is considered to be a function of the vomeronasal organ, which is located bilaterally on the nasal septum. The vomeronasal organ neural projection is to the hypothalamus and the amygdala, areas associated with emotion and hormone levels, rather than to the higher cortex<sup>13</sup>. Recent findings that presynaptic neurons of the vomeronasal organ

may differentially express both a diverse spectrum of odorant receptors and one or other of nine different nonclassical MHC class I genes add a further complexity to the MHC-olfaction story<sup>18</sup>. The nonclassical genes do not show the extensive allelic polymorphism associated with the conventional MHC class I system, and are not involved in 'classical' peptide presentation to conventional  $\alpha\beta$  TCRs. One of the nonclassical MHC class I products (M10) may be involved in bringing a particular class of odorant receptors to the cell surface<sup>19</sup>. This process is disrupted in  $\beta_2$ -microglobulin-deficient mice, which show diminished male aggression.

### Chemical signatures and class I

In the absence of a clearly defined mechanism, the apparent link between MHC class I phenotype and odorant receptor-mediated recognition could simply reflect some secondary consequence that is not necessarily related to conventional MHC glycoprotein expression. This seems unlikely, however, as the effect has been mapped to mutant H-2K<sup>b</sup> alleles that were first identified by skin graft rejection. These H-2 mutants can be discriminated both on the basis of mating preference and by patterns of c-Fos mRNA induction in the olfactory systems of mice exposed to urine samples<sup>20</sup>. Even more compelling is the fact that comparable degrees of discrimination can be achieved by assaying mouse urine with an electronic nose<sup>21</sup>. The gas detectors in the 'e-nose' react differently to urine from C57BL/6 (H-2K<sup>b</sup>D<sup>b</sup>), B6.C-H2<sup>bm1</sup> (H-2K<sup>b</sup>D<sup>b</sup>), B10.Br (H-2K<sup>k</sup>D<sup>k</sup>), B10.D2 (H-2K<sup>d</sup>D<sup>d</sup>) and B10.A (H-2K<sup>k</sup>D<sup>d</sup>) mice. Non-H-2 'background genes' may also be involved, as the e-nose can distinguish urine from the H-2K<sup>b</sup>D<sup>b</sup> congenic BALB.B and B6 strains. Other behavioural studies<sup>22</sup> have led to the identification of a large, diverse family of major urinary proteins that are unrelated to MHC but are also involved in odorant recognition. Even so, it is clear that distinct olfactory signatures can reflect a very limited mutational change in a structural H-2 gene (H-2K<sup>b</sup> to H-2K<sup>bm1</sup>). Furthermore, the differences in conventional MHC class I type can also be detected in serum and in human sweat<sup>17</sup>.

Beyond that, the underlying mechanism is far from obvious. The e-nose analysis did not detect volatile compounds in urine that were unique to particular H-2-congenic mouse strains, but was able to identify substantial H-2-related differences in the ratios of peaks associated with, for example, 3-methylbutanal and 2-pentanone (1:1 in B10.D2, 10:1 in B10.A and 3:1 in B10.Br). How might these chemical signatures reflect the H-2 type? Speculations include the possibility that they are catabolic products of MHC glycoproteins, of the peptides bound to MHC, or of other molecules that are influenced secondarily by the MHC expression profile. Second-order effects related to environmental antigens, like viruses, seem unlikely, as the mouse behavioural experiments indicate that the odour types of germ-free and conventionally reared mice are similar<sup>21,23,24</sup>. Another idea is that degraded MHC molecules lose bound peptide and take up volatile carboxylic acids. Olfaction still holds many mysteries. It is not possible, for example, to look at the chemical structure of an aromatic compound and say *a priori* what it will smell like.

### Evolution

Given the associations with disease resistance on the one hand and mate selection on the other, it is hardly surprising that the classical MHC class I glycoproteins and the odorant receptors can be under strong selective pressure<sup>25,26,27</sup>. Each is expressed differently in human populations that have been culturally or physically isolated, though there is no reason to think that the two systems are not segregating independently. Olfaction is, in the phylogenetic sense, much more ancient than adaptive immunity. The classical MHC class I genes first emerged<sup>28</sup> in the jawed fishes (about 450 million years ago), although some evidence of homology has been detected in *Caenorhabditis elegans* for proteasome and C5-like (MHC class III region) genes<sup>29</sup>.

Graft rejection does not seem to be a feature of *Drosophila melanogaster*, although the fruit fly has G protein-coupled, seven-transmembrane odorant receptors that are equivalent to those in mammals both in structure and organisation (although not number: 60 versus 1000, respectively). Fruit flies and some other insects also use a diverse family of odorant-binding proteins found in high concentrations in the aqueous lymph surrounding odorant receptor-bearing sensory neurons<sup>30</sup>. However, there is no suggestion that these are in any way comparable to the classical or nonclassical MHC class I molecules. The pheromone-recognition associated with the classical MHC class I proteins may have been added to olfaction-based discrimination mechanisms that are considerably older in phylogeny. The evidence for an essentially simultaneous emergence of the key components for peptide processing and T cell recognition during the early evolution of the jawed vertebrates<sup>28</sup> would seem to point to the need for immune surveillance as a primary reason for the emergence of the MHC class I molecules. Is the requirement for immune diversity to counter new pathogens so central to the survival of mammalian species that the olfactory link to MHC class I has been favoured as a further driver of polymorphism?

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## OPPORTUNITIES CREATED BY THE BIO21 PROJECT

Opportunities for Faculty of Medicine, Dentistry and Health Sciences researchers and clinicians to capitalise on the continuing revolution in the biosciences are about to increase following the completion of the University of Melbourne's Bio21 Institute, scheduled for September 2004.

The \$100 million institute has been developed as an incubator of both multidisciplinary research and new businesses, and a provider of industry-targeted training and access to a range of cutting edge platform technologies. When fully operational, the institute will accommodate over 400 scientists and support staff from academia and industry. The 22 000 square metre building complex, with its extensive range of open plan laboratories, a large functional atrium and a variety of meeting facilities, has been specifically designed to maximise opportunities for research collaborations, communications and integration of the different research and industry cultures based within the institute.

Faculty researchers from at least five departments will participate in the institute's core research programs, together with researchers from several other University of Melbourne faculties and affiliated research institutes and hospitals. Resident researchers will bring their own projects, but will also commit time to the institute's core multidisciplinary research programs. Initially, the priority multidisciplinary areas will be drug and vaccine discovery (particularly allergy suppressors and dental, medical and veterinary pathogens anti-infectives), nutraceuticals, probiotics and safe pesticides designed to improve health, and biosensor and therapeutic applications of nanobiotechnology. A clinically-focused translational research centre will involve several clinical departments, based within the institute, with the extent of the facilities and the precise mix of the centre's programs depending on the outcomes of ongoing fundraising activities.

A key feature of the institute's commercialisation capability will be its Bio-Innovation Centre headed by Harvard PhD graduate, Peter Goss. The centre includes the institute's technology transfer and business development office, business incubator and specialist research transfer laboratories, designed to accommodate visiting scientists from industry and academia requiring access to expertise and the institute's extensive range of platform technology facilities. The integration of research, technology innovation and business incubation programs within a single institute is designed to provide emerging biotechnology companies with opportunities to leverage the academic and technological strengths for the university and its Bio21 partners.

Several companies have moved into the incubator, including companies specialising in medical informatics, clinical diagnostics and stem cell therapeutics. Even at this early stage there are signs of substantial synergies developing between the activities of these incubator-based company scientists and members of both the faculty and wider Bio21 community.

Apart from the increased opportunities to develop critical mass in research and technology innovation, the Bio21 project has generated additional benefits for faculty researchers through more effective networking, institutional collaborations, communications and strategic planning. Of fundamental importance to achieving these outcomes has been the coordinating and facilitating role of the Bio21 Institute's partner organisation Bio21 Australia Ltd, led by David Penington and CEO Stella Clark.

For more information, contact Bio21 Institute director, Dick Wettenhall, at <http://www.bio21.org>.

12 August 2003

## TESTING THE AMYLOID THEORY OF ALZHEIMER'S DISEASE

By Professor Colin Masters

*Laureate Professor, Department of Pathology*

**M**R DEAN, PAST deans, members of the Halford family, colleagues, guests, thank you so much for coming tonight to learn about Alzheimer's disease and some related disorders.

A revolution, a paradigm shift, has taken over this field in the last five years, in that we can now understand many of the disorders that affect the ageing brain under the common heading of a toxic gain-of-function of a normal host cell protein. This will be illustrated by reference to three diseases: Alzheimer's disease, Parkinson's disease, and Creutzfeldt-Jakob disease. These diseases account for a large proportion of all the chronic neurodegenerative disorders that affect the ageing brain.

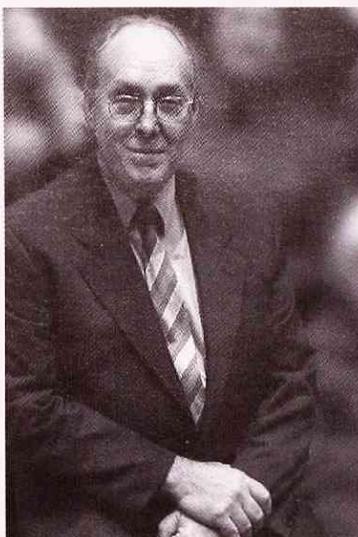
Nearly a century ago, in 1906, Alzheimer's seminal patient (her name was Martha D) was described as an individual who presented predominantly with personality changes which progressed rapidly over a period of five years. She was fifty-one at the time of presentation. Alzheimer identified the neurofibrillary tangles and amyloid plaques which today we accept as the hallmarks of this disease. We now understand in molecular detail how these changes occur in a very stereotypic fashion, affecting certain areas of the brain, particularly in the temporal lobe, then spreading to other areas of the brain.

Interestingly, Alzheimer was contemporaneous with Halford. Alzheimer lived between 1864 and 1910. Did Halford know of Alzheimer's work? We will never know for sure, but I would like to think that he did.

I have spent the last thirty years puzzling over the disease pathway that leads to plaques and tangles. My colleague, Konrad Beyreuther, and I purified the A $\beta$  amyloid protein from the brains of persons with Alzheimer's disease, determined the amino acid sequence (also with George Glenner) and used this sequence in reverse genetics to decode the A $\beta$  amyloid precursor protein (APP). This opened the molecular pathway for us which now defines the molecular targets for therapeutic intervention in Alzheimer's disease and is now the subject of more than 800 scientific papers a year. In essence, our major discovery was that the processing of APP by a series of enzymes, which we now call secretases, releases the A $\beta$  region of the molecule from the cell membrane, allowing it to accumulate in the brain and give rise to its toxic gain-of-function which causes the nerve cell degeneration.

We now also realise that there are two major pathways of disease causation. The first is that too much A $\beta$  protein is made, and is seen in rare familial cases. The second, more common, pathway is because the brain can't clear this protein out of its extra-cellular spaces. These two pathways constitute the 'A $\beta$  amyloid theory' of Alzheimer's disease.

The only way to evaluate the A $\beta$  amyloid theory is to put it to the test by treating a person with Alzheimer's disease with a drug that targets one of these A $\beta$  pathways. Investigators are doing this right now, using strategies which either inhibit the



COLIN MASTERS

production of the protein (inhibitors of the beta- and gamma- secretases), or promote the clearance or neutralise the toxic-gain-of-function of A $\beta$ .

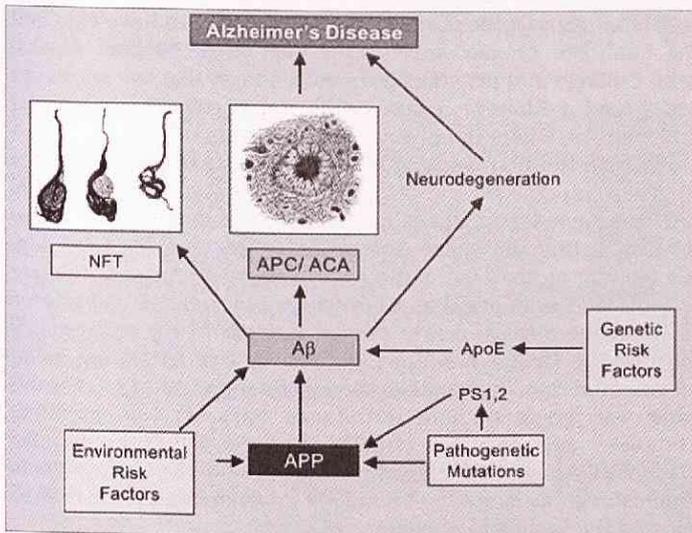
My colleagues—Roberto Cappai, Michael Parker, Kevin Barnham—have worked steadily to pull this APP apart and to dissect its structure at the molecular level. Despite decades of work we still don't know what its normal function is. A major clue to normal function however, came through the study of this protein in simple systems like the wing of *Drosophila*. When the protein is over-expressed in the *Drosophila* wing it falls apart and develops blisters. This is a very characteristic feature of a protein which is disengaging one membrane surface from another. We believe, therefore, by inference, that this protein has a normal function in the brain of helping synapses disengage—it may play a role in 'forgetting', by diminishing the strength of synapses.

In the mid 1980s, scientists were hard at work deciphering the genetic linkages of pedigrees of people with early onset Alzheimer's disease. Through this work several major discoveries were made. Firstly, if you have a mutation in the APP gene itself you can get very early onset Alzheimer's disease. This discovery pins down the A $\beta$  theory completely, since there cannot be further argument as to whether this molecule is at the centre of the disease process. Another fundamental discovery was of a series of proteins which were the machinery that processed this APP protein and cleaved it into the smaller A $\beta$  fragment. These proteins are now prime therapeutic targets.

We have collaborated with the pharmaceutical industry over the last ten years in a very productive fashion. Genevieve Evin has studied compounds discovered from the Merck library, through screens of their HIV aspartyl protease inhibitors, which actively stop the production of the A $\beta$  protein. Some of these compounds from the 'big Pharma' industry are now in clinical trials for efficacy in Alzheimer's disease.

We have also developed another strategy that might be applicable to Alzheimer's disease.

Robert Cherny, Ashley Bush and Catriona McLean have shown abnormal levels of soluble forms of the A $\beta$  protein in Alzheimer's disease brains. It is now clear that these forms are the source of toxicity in the brain. But what is the exact mechanism of this toxic gain-of-function? Back in 1986, Ralph Martins and I observed that the brain of a person with Alzheimer's disease is under major oxidative challenge. Kevin Barnham, Robert Cherny, Ashley Bush and Cyril Curtain have focused on dissecting how the A $\beta$  contributes to the oxidative damage. We know from their studies that when A $\beta$  is sitting in the membrane it's in an  $\alpha$ -helical conformation. If it is taken out of the lipid environment, it flips into a  $\beta$ -sheet. The toxic gain-of-function is somehow related to this changed conformation. There are some critical residues, particularly methionine 35 and

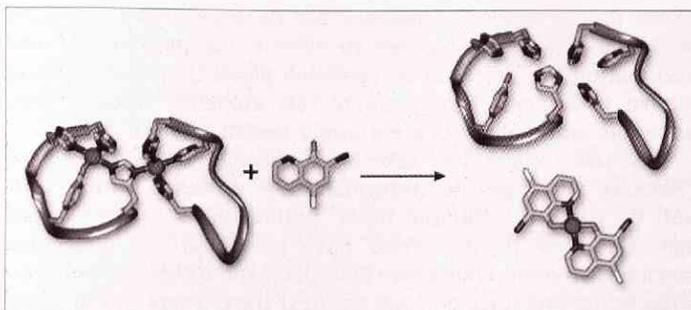


An outline of the principal pathway which leads to Alzheimer's disease: the amyloid precursor protein (APP) is proteolytically cleaved into the A $\beta$  amyloid peptide, which then aggregates as amyloid plaques (APC) or peri-vascular depositing (ACA). Nerve cells also undergo degenerative changes (NFT). Genetic factors [Apo E or the presenilin (PS) genes] are involved at various levels of this pathway.

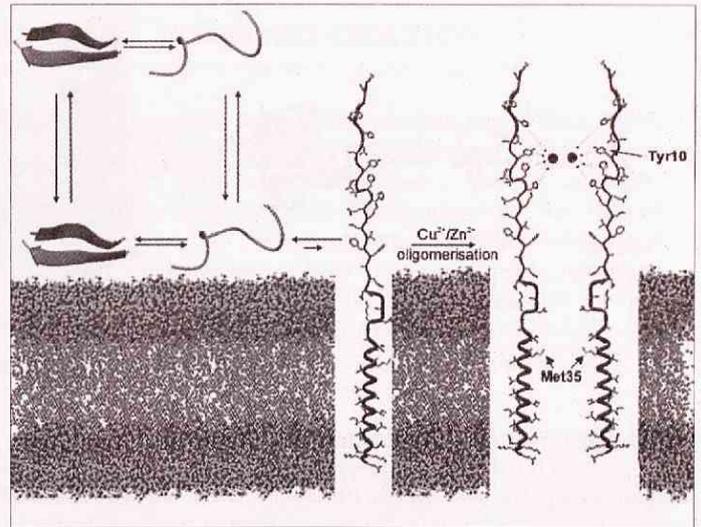
tyrosine 10, which affect the shape, conformation and toxicity of this protein. Ashley Bush described that copper and zinc can actually bind to a certain region of this molecule, and make it form a dimer, which seems to be its most toxic state when it is redox active. If you add metal ions to this peptide, such as zinc and copper, you can make it aggregate, and if you add a chelator, you can make it more soluble. In the presence of redox active metals like copper, A $\beta$  has the property of generating hydrogen peroxide.

As a proof-of-principle we have done some work using an old retired antibiotic called Clioquinol (iodochlorhydroxyquin). Known since the 1920s, Clioquinol has a small molecular weight, is very hydrophobic and rapidly crosses the blood-brain barrier and, although it is not a chelator in the true sense of the word, it has weak affinity for metals such as copper and zinc. First we looked at Clioquinol in test tubes, and were able to show that we could completely shut down the production of hydrogen peroxide from A $\beta$ . Then we put it into experimental animals which had been genetically engineered to produce too much of this A $\beta$  protein and thereby mimic, to a certain degree, the human Alzheimer's disease condition. After nine weeks treatment with this drug the A $\beta$  plaques in some animals disappeared completely and, statistically, there was more than a fifty per cent reduction in the total A $\beta$  amyloid load.

Our next strategy was to develop small compounds which actively interfere with the metal binding on A $\beta$ . We call these compounds MPACs—metal protein attenuating compounds—and the idea is that they impair the metal ions binding to this A $\beta$  protein, therefore allowing it to break apart, promote its solubilisation, and at the same time decrease its toxicity. Some



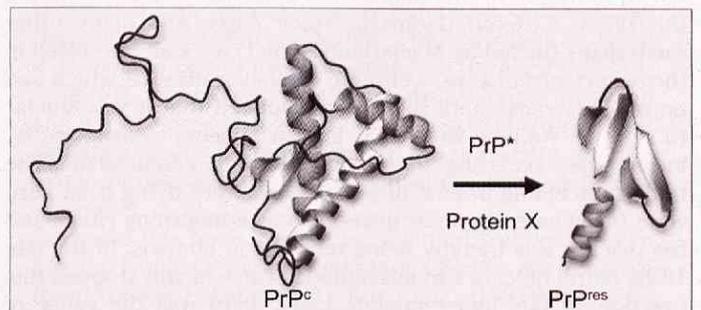
Small molecular weight compounds such as clioquinol can prevent metal ions like Cu<sup>2+</sup> or Zn<sup>2+</sup> binding to the A $\beta$  monomer or dimer.



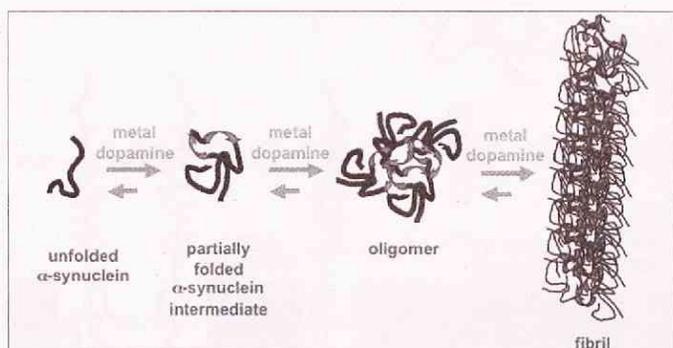
A model of the A $\beta$  peptide in the lipid bi-layer of a cell membrane, in a typical  $\alpha$ -helical conformation, with redox active residues (at positions 10 and 35) shown. When removed from the lipid environs, the peptide may assume a  $\beta$ -sheet structure.

of you will know that we have just finished a small pilot study with this compound in humans with Alzheimer's disease. We were able to show that, after nine months' treatment with increasing doses, at four weeks and at twenty-six weeks, we saw statistical separation in the cognitive differences between the placebo group and the group being treated with this drug. More importantly, when we measured the levels of A $\beta$  protein in the blood, we showed that in the placebo group the blood levels increased and in the group who received the drug, the blood levels decreased. This is the first evidence that a drug targeting Alzheimer's disease A $\beta$  amyloid could be having the effect that we predicted from the 'A $\beta$  amyloid theory'. This was a pilot study, however, and it needs to be repeated in a much larger series.

I now turn to Parkinson's disease. James Parkinson described this condition well before Halford was born. In 1996 there was a seminal description of a Greek pedigree which had a mutation in the  $\alpha$ -synuclein gene. In our laboratory, Catriona McLean and Janet Culvenor showed that if you take an antibody to this protein it lights up those structures which are the pathognomonic signals of Parkinson's disease, the Lewy body. That told us immediately that, just as in Alzheimer's disease, there was a single protein which was misfolding and aggregating in the Parkinson's disease brain. We therefore hypothesise that there is something peculiar about the way that  $\alpha$ -synuclein interacts with metals and dopamine. Dopamine is a very redox active molecule, and in the presence of metals we expect it to lead to the aggregation of  $\alpha$ -synuclein and therefore gain a toxic function. We are just at the very beginning of unpicking this pathway, but already



A model of the changes in conformation of the Prion protein (PrP) as it becomes either pathogenic and/or infectious.



The pathway of aggregation of  $\alpha$ -synuclein which may lead to Parkinson's disease.

there are some very encouraging results. Roberto Cappai can show that, in the absence of dopamine, we see no aggregation of  $\alpha$ -synuclein. In the presence of dopamine, there is a very marked aggregation of this protein. Julie Anderson of the Buck Institute has shown that it is possible to intervene in a mouse model of Parkinson's disease, using a similar strategy to that which I've shown above for Alzheimer's disease. Anderson took two models of Parkinson's disease, one the MPTP model of acute toxicity, and the other a genetically engineered mouse with too much iron in its brain. When she used the metal protein attenuating compound and treated these animals, she was able to show that the motor impairments which are characteristic of Parkinson's disease were ameliorated. Thus, we have reason to think that similar sorts of drugs effective in Alzheimer's disease may be effective in Parkinson's disease because they are targeting the toxic gain-of-function of  $\alpha$ -synuclein.

Finally, I come to Creutzfeldt-Jakob disease (CJD). I started working on this group of diseases as a third year medical student in 1967. Alfons Jakob, working in Hamburg, was also partly contemporaneous with Halford. You will be familiar with the term 'scrapie', a disease of sheep and goats. You are now also probably familiar with 'mad cow disease'. You may not know of the expanding infectious disease that is affecting the wild cervids (elk and deer) in the western United States and southern Canada. You should also be aware that mad cow disease (Bovine Spongiform Encephalopathy—BSE) has spread into cats, and some exotic ungulates.

Today saw the opening of the National Neuroscience Facility in one corner of which resides the Australian National CJD Case Registry. This is run under a contract with the Commonwealth Government by Steve Collins, Alison Boyd, Vicky Lewis and Genevieve Klug, who monitor the occurrence of CJD in Australia. There are two main reasons behind the establishment of the registry. First, back in the early 1990s we had a major contamination event with human pituitary-derived hormones which led to five women developing this infectious disease. Another reason emerged more recently with the threat of BSE. Fortunately, Australia is free of BSE, and CJD remains a rare disease, occurring at a rate of 1-1.5 cases per million annually.

In the Eastern Highlands of Papua New Guinea, during the 1950s, Carleton Gajusek, Vince Zigas, and many other Australians (including Macfarlane Burnet) were all interested in the occurrence of kuru, a chronic cerebellar disease, which had no obvious cause until Bill Hadlow noticed that it was similar to scrapie. We now know that kuru was being transmitted by intraspecies recycling in humans through cannibalism. The bodies, including brains, of people who were dying from kuru were being eaten by their next-of-kin as a mourning ritual, and the disease was thereby being recycled in humans. In the late 1950s patrol officers and missionaries came in and stopped this practice. In this hyperendemic focus, kuru was the cause of death in about five per cent of this population per annum. It got to the point where it was a major health problem, but in a very

restricted geographic group. In fact, it appears to have changed the complete human genotype of that area. Michael Alpers, John Collinge and his colleagues have shown that the survivors today have a different genetic profile compared to neighbouring communities where the disease was not present.

In 1986 the first warning bells were heard of the emergence of a new disease on the horizon in the United Kingdom. This BSE disease reached a peak in about 1992. It took three years to determine that the cause was probably intraspecies recycling: the feeding of diseased cattle to normal cattle through the use of meat and bone meal as a protein supplement in calf starter rations. The disease nearly caused the loss of the entire dairy herd of the United Kingdom, because it was escalating at an exponential rate. Fortunately, the veterinary authorities realised what was going on and introduced bans on this practice. Complete and effective countermeasures didn't come into place until August 1996, by which time the bovine epidemic was diminishing, but more than a million infected head of cattle had entered the human food chain.

Over fifteen years ago we realised that the amyloid deposits which occur in CJD were quite different to those in Alzheimer's disease, and different again to the Lewy inclusions in Parkinson's disease. The discoveries of Stan Prusiner from 1982 to 1989, in which he uncovered the major protein present in the infectious component of scrapie, also showed clearly that this protein (prion protein or PrP) was the constituent of the amyloid accumulating in these diseases.

I started to work on this PrP amyloid protein at the NIH in 1978 and then, because they were of low abundance, I switched over to Alzheimer's disease. If I had persevered, I would have uncovered the same protein that Prusiner found by other means. The normal PrP protein has three  $\alpha$ -helices and a long N-terminal loop. In these diseases the PrP protein changes its shape and it goes from a conformation of an  $\alpha$ -helix into a  $\beta$ -sheet, and it is this conformation change which appears to confer a toxic gain-of-function. As it becomes insoluble, it accumulates in the brain and poisons the nerve cells. Michael Jobling, Roberto Cappai and Kevin Barnham have looked very carefully and defined metal binding sites on this protein. Understanding the molecular mechanism of the change in conformation, how metal ions such as copper bind to these critical regions and alter its conformation from an  $\alpha$ -helix to a  $\beta$ -sheet, may lead to another therapeutic target in addition to uncovering the mechanisms of infectivity.

In 1986 BSE was first recognised. In 1990 the Edinburgh-based CJD registry began surveillance of CJD because of the concern that this bovine disease might jump the species barrier and affect humans. In 1996, after a year in which several young individuals were identified, it became apparent that a new form of CJD had emerged in the United Kingdom. It took eighteen months for all the pieces of scientific evidence to come into place to prove that this new variant CJD was, in fact, related to exposure to BSE. More than 150 individuals have now been diagnosed with this disease, all of the same genotype at codon 129 of the PrP protein. At the time of writing, it appears that the current primary wave of the epidemic from bovines to humans has peaked. But new information has emerged on probable blood transmission from human to human. The future of this epidemic remains very uncertain and remains of great public health concern.

My talk tonight has taken you through the spectrum of common and rare neurodegenerative diseases which turn out to have a common basic pathogenesis. Thirty years ago, very few people could have predicted the molecular mechanisms underlying these disorders, and today it appears so straightforward! Imagine what the next thirty years will bring as we move towards specific therapeutic strategies based on these new understandings.

## GEORGE BRITTON HALFORD AND THE HALFORD ORATION

George Britton Halford was the inaugural professor in the first medical school in Australia and one of the most distinguished experimental physiologists of the day. He came from England to Melbourne in 1824 to take up the position as foundation professor of anatomy, physiology and pathology at the University of Melbourne where he was also appointed head of the School of Medicine.

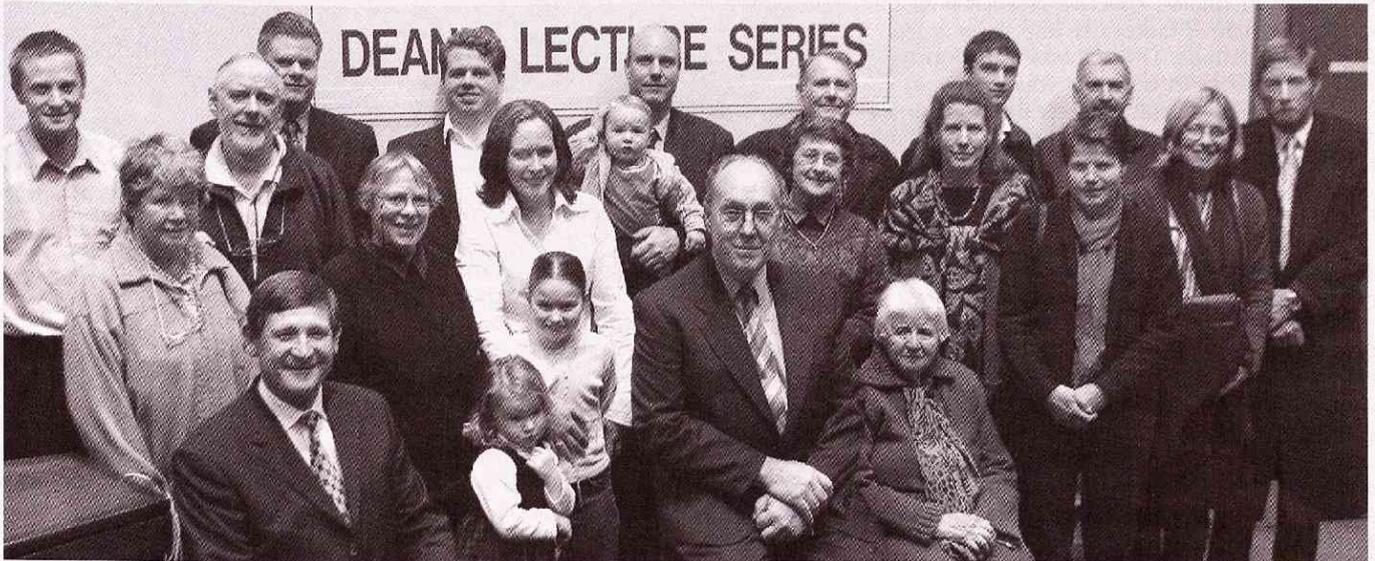
When the Faculty of Medicine was created in 1876, Halford was elected dean, holding the



GEORGE BRITTON HALFORD

position until 1886 and again from 1890 to 1896. Halford retired from the University of Melbourne in 1903 and died in 1910.

In 1928 Halford's family endowed the Halford Oration 'to commemorate the work and researches' of their father and 'to bring before the public some recent work in the medical sciences'. The Halford Oration is delivered every three years and is regularly attended by Halford's descendants.



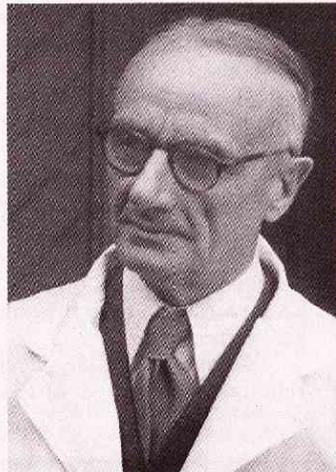
COLIN MASTERS (SEATED, CENTRE) WITH THE DEAN, JAMES ANGUS (SEATED, LEFT) AND DESCENDANTS OF PROFESSOR GEORGE BRITTON HALFORD AT THE THIRTY-SEVENTH HALFORD ORATION IN AUGUST 2003. (Photo Dale Mann, PhotoNet)

## A Melbourne Doctor and his Generation

When Leonard Bell Cox enrolled in the Faculty of Medicine in 1912, it marked the beginning of a long association with the University of Melbourne. Returning from war service in England and France in 1919, Cox passed his MD examinations while working as a Beane Scholar, under Sir Harry Allen in the Department of Pathology, and as an assistant in the newly established Walter and Eliza Hall Institute.

Cox specialised in neurology and neuropathology, becoming the first such specialist in Australia. Some of his neurological research—carried out in the garage of his Malvern home—led him to the boundaries of research on brain tumours and gained him an international reputation.

In the late 1920s Cox returned part-time to the department of pathology and, in 1934, Peter MacCallum persuaded



LEONARD BELL COX

him to accept an honorary position as lecturer in neuropathology.

A man of broad talents, he was invited to join the National Gallery of Victoria to become their honorary curator of Asian art. He was subsequently appointed a trustee and chairman of the gallery, signing the initial contract leading to the construction of the new National Gallery in St Kilda Road.

Cox was also a devoted gardener at his weekend cottage in the Dandenongs, where Edna Walling laid out a beautiful garden for him in the late 1930s.

The Department of Pathology, together with Dame Elisabeth Murdoch AC DBE, recently sponsored the launch of a biography of Leonard Bell Cox in the Leonard B Cox Neuropathology Reference Centre at the National Neurosciences Facility. The biography is titled *A Melbourne Doctor and his Generation: Leonard Bell Cox, 1894-1976, Neurologist, Orientalist, Art Collector, Gardener*, and goes some way towards being a partial history of the hospitals in which Cox worked, of the university, and the many cultural and scientific organisations of which he was a member.

Copies of this book, written by Volkhard Wehner, Mervyn J Eadie, Monica S Wehner and Peter F Bladin, are available from Volkhard Wehner, PO Box 1002, HARTWELL, VIC, 3124, at a cost of AUD\$50 plus \$10 postage and handling.

## THANK YOU FOR YOUR SUPPORT

**T**HANK YOU TO all who gave financial support to the School of Medicine in 2003. The funds raised are contributing to several important teaching, research and student initiatives. Last year alumni donated \$49 500 with their UMMS membership and through the University Annual Appeal. These donations are supporting the following priority areas:

### Specialised research to meet contemporary challenges in health care—\$30 157

Health systems internationally are struggling to maintain sustained effective responses to the changing needs of culturally and economically diverse populations. These funds will contribute to population health research which focuses on defining changing health needs and evaluating the effectiveness, efficiency and quality of health care in order to guide future developments. The research incorporates epidemiology, health economics, health social sciences and ethics.

The funds will also support sports medicine research which examines the role of physical activity in the prevention and management of chronic diseases. This research explores appropriate physical activity across the lifespan in order to tackle some of the growing health problems of Western societies such as obesity, heart disease, osteoarthritis and osteoporosis. A laboratory has been established to measure how people move, how their muscles work, what loads are applied to the body and how much energy is expended during activity. These measurements indicate how the body functions and are essential for making improvements in the prevention and management of health problems.

### Helping medical students in financial need—\$11 895

These funds will assist medical students who are experiencing financial distress and who, without such support, may be unable to complete their medical course. This assistance is provided to medical students through the university's student financial aid office.

### Medical research—\$6053

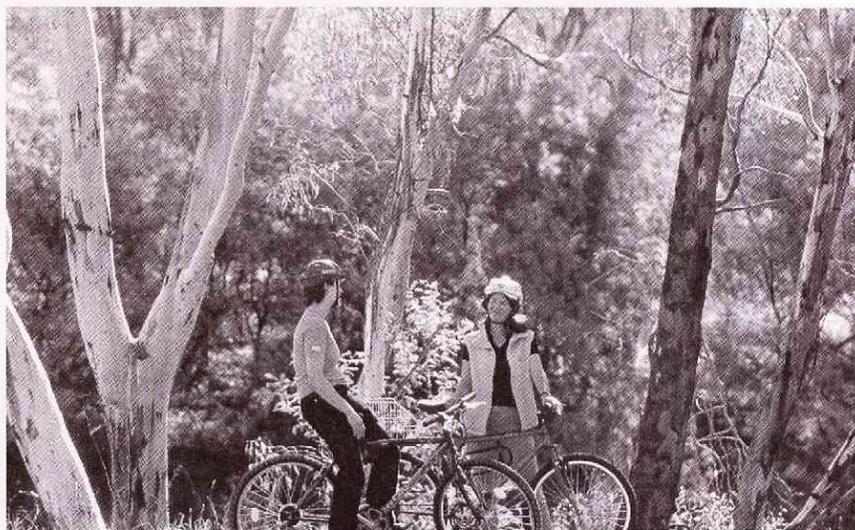
This income will provide essential resources for important research projects in areas such as diabetes, vaccines, cancer, genetics, diseases of bone, HIV, cardiovascular disease and pain.

### Student prizes to encourage outstanding achievement—\$1395

This income will fund prizes such as the Advanced Medical Science Prize and the Peter G Jones Elective Essay Prize. These prizes acknowledge outstanding student achievement in research and in professional and personal development during electives in the medical course.

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 interest in our activities and hope that you will continue to support the school's teaching, research and student programs this year.

If you would like more information about making a donation or a bequest to the University of Melbourne, please contact the Manager, Fundraising Coordination, Development Office, the University of Melbourne, Victoria 3010, Australia. Telephone (+61 3) 8344 0896, email: [bequests-development@unimelb.edu.au](mailto:bequests-development@unimelb.edu.au). Alumni in the USA, Mexico and the UK, please see p44 in this issue of *Chiron*. All enquiries are treated in strictest confidence.



ALUMNI FUNDS WILL SUPPORT PRIORITY AREAS INCLUDING RESEARCH INTO EFFECTIVE HEALTH CARE FOR ECONOMICALLY DIVERSE POPULATIONS AND RESEARCH ON THE ROLE OF PHYSICAL ACTIVITY IN THE PREVENTION AND MANAGEMENT OF CHRONIC DISEASES. *Photo Michael Silver.*

We warmly acknowledge and thank everyone who contributed to School of Medicine initiatives in 2003. We list here UMMS members who donated \$100 or more and who gave their permission for this acknowledgment. A total of 452 members donated to School of Medicine activities during the year.

Mandy Baric, Ronald M Barry, John Bartlett, Victor Brand, Jennifer M Brown, Peter F Burke, James M Butler, Stephen A Cantor, Simon Ceber, Peter Champness, Robert Chan, William Christophersen, Anthony A Coates, Anthony C Cohen, Howard Connor, Terry I Cook, Christopher FA Dibden, Brendan J Dooley, Douglas M Druitt, James E Elder, Harold Fabrikant, George Freed, James M Gardiner, Peter C Gates, Aleck Goldman, James S Guest, William S Hare, Walter F Heale, Margaret M Henderson, Robert Herrmann, Boon H Hong, Roland F Hunt, Dorothy B Hurley, Howard D Irish, AR Jackson, Paul E Jeffery, Allan M Kalus, Raphael J Kuhn, Gabriel A Kune, Richard G Larkins, Hok C Lau, Keith B Layton, Gail E Littlejohn, Brian E Mackay, Don Maclean, Tony Mariani, Jim Martin, Allan Mawdsley, Richard I McMullin, Ruth P McNair, John W Middleton, John W Parry, Winton H Phillips, Christopher R Priest, Jenny Proimos, Dulcie G Rayment, Sig Rosenbaum, John P Royle, Margaret J Sanders, Barbara P Sawyer, Mary Schramm, Michael A Shembrey, Michael P Shoobridge, Kenneth A Sikaris, Carole L Smith, Edward D Smith, George M Somjen, Bernice F Stratford, Ian A Swain, Jim Syme, James Tatoulis, Rebecca K Telford, Karin Tiedemann, Stephen A Tobin, John W Upjohn, Thongueb Uttaravichien, Karen S Wayne, John B Webb, David O White, Charles W Wilson, Katherine C Yu.

We also gratefully acknowledge donations from recent reunions groups: Year of 1943 – \$100, Year of 1973 – \$3545, Year of 1987 – \$500.

### GRANT SUPPORTS NEW AWARD IN PALLIATIVE MEDICINE

A grant of US\$8000 from the University of Melbourne USA Foundation will enable the university to establish a new award in the Faculty of Medicine, Dentistry and Health Sciences in the area of palliative medicine. The grant has been made through the generous benefaction of the Woodruff family in the United States. The award will be established in memory of the late Katharine Woodruff.

## FROM THE DEAN

JAMES A ANGUS FAA

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

**T**HE FIRST STUDENTS to undertake our new medical curriculum will graduate this December. The new course was planned and developed without a break from offering the old curriculum and academic staff are justifiably proud of their endeavours. I thank them for their superb development of this major project.

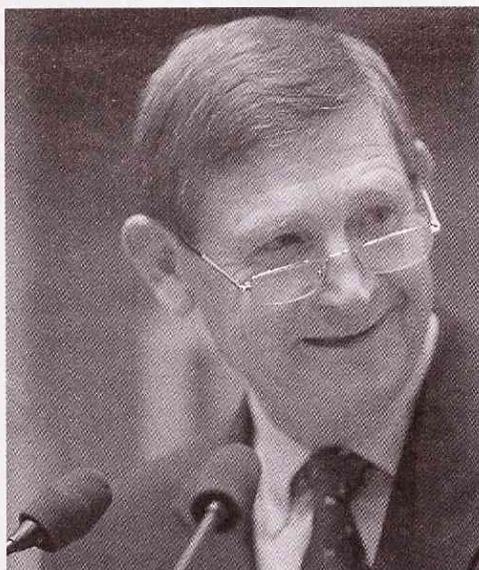
A special tribute is due to Neville Yeomans, our former associate dean (academic), for the major role he played in the development of the academic program and selection procedures for both the graduate and undergraduate streams. Neville worked tirelessly for the school and his measured approach ensured that changes to the curriculum were readily accepted by our busy pre-clinical staff and physician-teachers. The curriculum is in very good hands.

The Rural Clinical School is flourishing. All our students are either based at Shepparton for up to three semesters in the final years of their course, or spend a series of shorter rotations at Ballarat, Shepparton or Wangaratta. Dawn DeWitt, rural clinical dean and head of the School of Rural Health is leading the recruitment of new academic staff and the development of capital works at all three rural sites, where first class teaching facilities, including clinical skills laboratories and student work areas, are being constructed as part of the Commonwealth funding of rural medical training.

Next year, as Australian fee paying places in medicine become available in the wake of the Nelson reforms to higher education, the School of Medicine, together with prospective students and their parents, will be faced with major issues in selection. Issues we must consider when deliberating on the number of places we can offer include limitations on clinical placements, lecture theatre capacity, problem-based learning group size, and practical laboratory space. Rest assured, the school has an extraordinary depth of quality staff and teaching materials and is well placed to meet the challenge.

Ian Anderson graduated in medicine from the University of Melbourne in 1989. In April 2004, after nineteen years as an Aboriginal health worker, educator and general practitioner in health administration, Ian was appointed to the university's Chair of Indigenous Health. Ian was medical advisor to the Office for Aboriginal and Torres Strait Islander Health in Canberra before becoming founding director of the VicHealth Koori Health Research and Community Development Unit at the university. He has established a national reputation for the University of Melbourne contributing to national Indigenous health policy development, Indigenous curriculum in medical training, Aboriginal-led research programs and community development (see p.18).

The School of Medicine is significantly engaged in international collaborations in research, staff training and cooperation in medical school development. For example, we are working in partnership to help the University of Botswana at Gaborone develop their own medical school. The University of Botswana medical school is scheduled to start in 2009 and will build on its excellent medical students presently training at Melbourne. Students from Malaysia, Indonesia and Brunei are also engaged with us as overseas scholars. There are very



JAMES ANGUS  
Photo Michael Silver

significant prospects for our school to support the development of medical schools in these countries through staff training, curriculum development and research training.

In research, the School of Medicine continues to excel through cooperative research centre establishment, NHRMC/ARC funded programs, project grants and fellowships, and significant growth in state and Commonwealth support in collaboration with industry. I am most grateful to all the staff in the School of Medicine who have continued to get on with the job as I settle in to the position as dean. It is most rewarding to support such a fine faculty. As Churchill said, 'I am easily satisfied with the best'.

In April the Harry Brookes Allen Museum of Anatomy and Pathology was opened by Professor Emeritus David Penington. The museum combines the historic collections from both the

pathology and anatomy departments with the modern learning framework of group work, computers, simulation and online self-assessment. It is with much appreciation that I thank medical alumni for their donations that will provide support for our new museum. Please continue to take an interest in the school and our activities. We hope to host this year's annual UMMS function in the museum which will give UMMS members an excellent opportunity to see it. The museum will also be open to the public on Discovery Day.

Alumni funds will also help to develop new research facilities for two recently appointed chairs of medicine at Austin Health and at Northern Health.

Joe Proietto was appointed the Sir Edward Dunlop Medical Research Foundation Professor of Medicine in November 2003. He heads the new Metabolic Disorders Centre at Austin Health and Northern Health's Repatriation campus. The centre will tackle the obesity epidemic on an individual and research level, with studies of the function of genes related to obesity and diabetes, drug therapy trials and the establishment of a weight clinic. Professor Proietto oversees a twenty-strong research team studying metabolic disorders including obesity, diabetes and metabolic syndrome. Through the centre, residents of the north-western suburbs will be able to access an obesity clinic which will offer therapies including diet, drugs and surgery.

Judy Savige commenced her appointment as professor and head of the university's Department of Medicine at the Northern Hospital in October last year. She is an international leader in the genetics of human kidney disease, and the first woman to lead an academic department in a Melbourne teaching hospital. Her laboratory was the first to demonstrate the genes affected in Thin membrane nephropathy, which is the commonest cause of urinary bleeding and affects one per cent of all Australians. Her appointment helps to consolidate the Northern Hospital's position as the major teaching and academic centre for northern Melbourne.

We are very grateful for the financial assistance alumni provide for these priority programs and for their continuing support of medical students in financial need, medical student prizes and medical research. By assisting with these initiatives members contribute to improvements in health care through developments in medical education and research for the long-term benefit of our community.

## ACADEMIC DEPARTURES AND APPOINTMENTS

## Graeme Milbourne Clark AO

**A**FTER GRADUATING IN medicine from the University of Sydney, Graeme Clark commenced his career as an ENT surgeon. He soon returned to that university to complete a Master of Surgery and Doctor of Philosophy. Appointed foundation professor of otolaryngology at the University of Melbourne in 1970, he quickly worked to establish his research to develop the multiple-channel cochlear implant. Within eight years a patient received the world's first fully implanted multiple-channel cochlear implant. A speech processing strategy that enabled the understanding of some running speech without the aid of lip-reading was also developed. These developments provided proof-of-principle of Graeme's innovative approach and the Commonwealth Government subsequently awarded a Public Interest Grant to fund commercial development of the device.

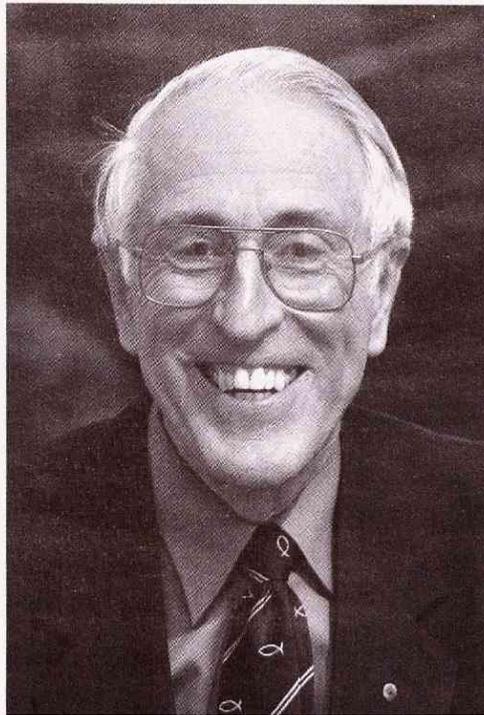
Within three years, the Australian firm Cochlear Limited had developed a commercial prototype of the implant and worldwide clinical trials had begun. In 1985 US Food and Drug Administration approval was granted and the Australian cochlear implant quickly established market dominance. Over 50 000 deaf people around the world now benefit from a cochlear implant, including over 20 000 children. The implant has been described as the first major advance to help deaf people since the advent of sign language 200 years ago.

For over thirty years Graeme Clark has led the team that has continued to make further advances in cochlear implants, including the development of advanced speech processing strategies, improved electrode designs and new or improved surgical, rehabilitation and clinical techniques. This research has led to significant hearing improvements for implant users and continued market leadership for the Australian cochlear implant.

A wide range of Australian and international peer reviewed grants and contracts also testify to the quality and excellence of his work. In 1988 Graeme established the Human Communication Research Centre, with funding awarded by the Australian Research Council under its Centre of Excellence program. His impressive publication list of over 350 peer-reviewed articles and publications reflects the scope and depth of his research and his major contribution to the body of scientific knowledge in the field of otology and hearing sciences.

Graeme's considerable contribution is not limited to cochlear implants alone. He has contributed key ideas in the development of a novel frequency specific objective hearing test device (SSEP), the development of the electrotactile hearing aid (Tickle Talker™) and also a combined cochlear implant and hearing aid (Combionic Aid). He also initiated the establishment of Australia's first university-based audiology training program at the University of Melbourne and played a key role in the establishment of professional audiology in Australia.

Graeme is a champion of deaf people, in particular children. His early work in the 1970s—establishing key groups such as the Deafness Foundation, improving public understanding of hearing loss and actively working towards the integration



GRAEME CLARK

of deaf people into the hearing world—testifies to his commitment. He has been a strong advocate of 'oral-aural' education in Australia, against considerable opposition from advocates of sign language. His view is that only when children are able to effectively communicate using hearing and voice, will they be truly able to become part of the 'hearing world'.

National and international recognition for his contributions have included an honorary fellowship of the Royal Society of Medicine, an honorary doctorate of medicine from the Medizinische Hochschule in Hannover in 1988, the degree of doctor of medicine (*honoris causa*) from the University of Sydney in 1989, the Sir William Upjohn Medal from the University of Melbourne for outstanding contributions to medicine in 1997, an honorary doctorate of science from the University of Wollongong in 2002 and, more recently, an honorary doctorate of engineering from Chung Yuan Christian University

in Taiwan. He was awarded the honour of Companion of the Order of Australia 'for services to medicine and to science through innovative research to further the development of cochlear implant technology for worldwide benefit' on Australia Day this year.

In 2000 Graeme Clark was appointed Laureate Professor of Otolaryngology by the University of Melbourne in recognition of his scientific achievement.

Graeme Clark resigned from the university to become the full-time director of the Bionic Ear Institute early this year. In recognition of his long-standing contribution to the university and to highlight the important continuing partnership between the University of Melbourne and the Bionic Ear Institute, the senior appointment committee has recently approved the title Laureate Professor/Director while Graeme Clark holds the position of director of the institute.

*John Huigen and Richard Dowell*

## Edward Byrne

**I**N 1974 ED Byrne graduated MB BS from the University of Tasmania. He moved to Adelaide and quickly advanced in his speciality, neurology, then to London in 1980, where he spent three years as muscular dystrophy research fellow in the Morgan-Hughes Laboratory at the Institute of Neurology in Queen's Square. In 1983, with support from Professor David Penington, he was drawn back to the post of senior neurologist and head of the department of neurology at St Vincent's Hospital in Melbourne, then director of neurology in 1987, and as professor/director from 1992 until 2000. It was a measure of the esteem in which he was held that these appointments were made before he was forty years old.

Ed Byrne founded and became the first director of the Melbourne Neuromuscular Research Institute, a position he held until 2000. He played a major role in establishing research programs and in fundraising activities.

Ed was appointed director of the university's Centre for Neuroscience in 2000. This occurred in the period during which his leadership and insight led to the foundation of Neurosciences Victoria and Neurosciences Australia, which have together raised over \$70 million from private and government sources to support research into neuroscience and neurological disorders.

Prominent on the world neurology stage, Ed is a member of the executive committee of the World Federation of Neurology on Neuromuscular Disease and was secretary-general of the IX International Congress on Neuromuscular Disease. Despite his busy and demanding clinical and administrative loads, he has maintained an active research program, having published close to 200 original articles. His research has concentrated on metabolic disorders of nerve and muscle, particularly mitochondrial disorders and muscular dystrophy. He is an international leader in the investigation of the roles of mitochondrial abnormalities in neurological disorders. His clinical studies have been complemented by excellent animal studies to investigate the biological bases of clinical disorders. It can be fairly said that Ed Byrne's studies in mitochondrial disorders, over a period of almost twenty years, have opened new insights into clinical, pathological, biochemical and genetic features of mitochondrial disease. Against this background, his group played a leading role in establishing the role of mitochondrial failure as a contributing factor to human ageing and as a predisposing factor to some neurodegenerative disorders.

Ed Byrne has worked in the clinic as well as in the laboratory and he is rightly regarded as one of Australia's leading clinical neurologists. Above all, Ed is a fine person of high ethical standards and is never stinting in his care and support for others. He is approachable and sympathetic to the needs of colleagues, students, employees and patients and he has made an outstanding contribution to enhance the esteem of the School of Medicine and the University of Melbourne. Ed will be sorely missed, but we wish him every success in the challenges of his new appointment as executive dean, Faculty of Medicine, Monash University.

*John Furness*

## Trefor Owen Morgan

**T**REFOR MORGAN RETIRED in March this year after a distinguished thirty-three year association with the University of Melbourne that began with his appointment as first assistant in the Department of Medicine (Austin & Repatriation General Hospital). With a clinical background in renal and cardiovascular medicine, Trefor Morgan focused his research on hypertension. His original contributions on the pathogenesis, prevention and treatment of hypertension are recognised internationally and have shaped clinical practice. He took major roles in the two Australian National Blood Pressure Trials that have been international landmarks in the field. His advocacy of the importance of salt and blood pressure predated the contemporary resurgence of interest in this topic and his novel hypotheses regarding salt and the vascular and cardiac complications of hypertension helped define a new chapter of basic and clinical research. His research has enjoyed funding from major national sources, including the NHMRC and the Heart Foundation of Australia, and has resulted in over 300 scientific publications. Internationally, Trefor Morgan's professional standing is reflected by regular invitations to speak at major conferences and the large number of journals that have sought his membership on their editorial boards.

Trefor Morgan's contributions to teaching have been no less impressive. As foundation professor of medicine at the University of Newcastle he helped pioneer a new medical curriculum based on integrated teaching that was unique at the time, and a forerunner of the problem-based curricula that exist today. His strengths at bridging basic and clinical sciences were further developed after his appointment as professor and head of physiology at this university in 1984. Early on he introduced clinically relevant subjects to second year medical students and, more recently, he has been closely involved in the development and implementation of the contemporary medical curriculum in which clinical teaching begins from day one. Trefor also fostered the use of computers in undergraduate teaching and placed the Department of Physiology at the international forefront in multimedia teaching and education.

His administrative skills were honed early in his career as a clinical superintendent at the Royal Prince Alfred Hospital in Sydney. Through the application of sound organisational principles he ensured a comprehensive and effective departmental teaching administrative framework, much appreciated by students.

Despite his extensive academic and clinical commitments to the Faculty of Medicine, Dentistry and Health Sciences, its associated hospitals and their patients, Trefor Morgan has also managed to achieve additional academic qualification in the form of BAppSc (wine). More importantly, he has put theory into practice with great success at his own vineyard, Mount Charlie wines. Fittingly, Trefor Morgan's association with the university will carry on after retirement, as the members and guests of University House continue to enjoy his wines.

## Bob Williamson AO FRS FAA

**B**OB WILLIAMSON RETIRES from the directorship of the Murdoch Childrens Research Institute (MCRI) in September this year. He has been director of the MCRI at the Royal Children's Hospital and David Danks Research Professor of Medical Genetics since 1995.

Bob Williamson trained in chemistry and biochemistry at University College London, completing his PhD in 1963. He was appointed professor of molecular genetics at St Mary's Hospital Medical School, University of London, in 1976.

During this time he spent periods working at Johns Hopkins, Columbia University in New York, and the Institut Pasteur in Paris, and led a project on the ethics of patenting the human genome for the European Union. He served on the UK Government's genetic manipulation advisory committee from 1976 to 1988.

He has been awarded an Officer of the Order of Australia (AO), the Wellcome Medal of the Biochemical Society, the King Faisal Gold Medal for Medical Research, and many other awards.

Professor Williamson is also a fellow of the Royal Society (London), the Australian Academy of Sciences, and the Academy of Medical Sciences (UK), as well as a fellow of several royal colleges.

He is secretary of the World Health Organisation Committee on Ethics and Genetics, and a member of the Australian Academy of Science National Committee for Medicine.

Professor Williamson's research group cloned the human globin genes and determined the mutations that cause thalassaemia. Contributions to gene localisation for muscular dystrophy and cystic fibrosis followed, as did identification of the first mutation causing inherited Alzheimer's disease.

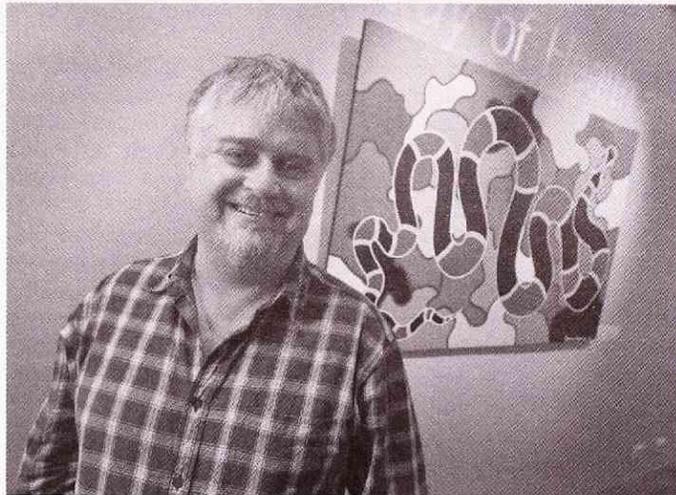
He has major research interests in the human genome project, gene therapy for cystic fibrosis, ataxia and thalassaemia, ethical issues raised by the human genome, and public health.

Professor Williamson has continued his research into human gene identification and gene therapy since moving to Australia. He is committed to studies on education and ethics as applied to human genetics.

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## Ian Anderson

NEW CHAIR OF INDIGENOUS HEALTH



IAN ANDERSON

**I**AN ANDERSON HAS been appointed to the new Chair of Indigenous Health at the University of Melbourne, School of Population Health. Ian Anderson is one of Australia's leading Indigenous health experts and is the first Aboriginal Australian to hold a chair in Indigenous health.

The chair has been established in recognition of the university's leadership in Indigenous health education and research. The appointment will help raise the profile of Indigenous health issues at state and national levels and foster partnerships and collaborations with Indigenous communities.

Ian Anderson was the first Indigenous graduate in medicine from the University of Melbourne (1989) and subsequently excelled as a student in sociology at La Trobe University. He has worked in Aboriginal health for nineteen years as an Aboriginal health worker, health educator and general practitioner in health administration. He was chief executive officer and medical director for the Victorian Aboriginal Health Service and held a senior management role in government as medical adviser to the Office for Aboriginal and Torres Strait Islander Health.

In 1999 Ian was appointed founding director of the VicHealth Koori Health Research and Community Development Unit at the University of Melbourne where he has established teaching, community development and Aboriginal-led research that has positioned the University of Melbourne as a leading contributor to national Indigenous health policy development. In addition to this role, he is now in his third year as head of the Centre for the Study of Health and Society at the university, overseeing its restructure and the development of new postgraduate award programs and medical student teaching.

Ian Anderson has had a major role in developing the research agenda and the application for the newly re-funded and substantially restructured Cooperative Research Centre for Aboriginal Health. He was recently appointed as the centre's research director. The centre is funded for seven years for

approximately \$24 million and the University of Melbourne is a core partner in this centre. He has also recently been appointed by the Minister for Health and Ageing to be the Indigenous member of the nation's peak health body, the National Health and Medical Research Council.

A strong advocate of Aboriginal-led health initiatives for Indigenous people, Ian aims to make best use of the university's significant research resources, infrastructure and support to help advance Aboriginal community goals and aspirations. Over the last four years there has been significant growth in both Indigenous staff and areas of study at the university, where academics can work together across disciplines, in politics, health and other Indigenous studies areas. This appointment acknowledges the leadership role played by Indigenous academics within the university and will support further development of teaching and research programs in Indigenous health.

## Terry Dwyer AM

**T**ERRY DWYER HAS been appointed to the position of director of the Murdoch Childrens Research Institute and will take up his position in September this year. He has been director of the Menzies Institute in Hobart since it opened in 1988. Heading a staff of more than seventy, he is personally involved in research on asthma, childhood obesity, cancer and multiple sclerosis. The focus of Professor Dwyer's current research is the way in which genes and lifestyle interact to cause disease.

After completing a medical degree at the University of New South Wales, Professor Dwyer started his research career in the USA, studying at Yale University. On returning to Australia, he worked first at the CSIRO Division of Human Nutrition in Adelaide and then at Sydney University before moving to Tasmania to set up the Menzies Institute.

Professor Dwyer led important research in the 1990s demonstrating that sleeping in the prone position is a cause of sudden infant death syndrome. His research findings—which led to a revolution of parents putting their infants to sleep in prone position—have saved thousands of babies' lives all over the world. For this he was awarded the Australian Society for Medical Research Medal in 2003.

Professor Dwyer's research was recognised in a National Health and Medical Research Council report published in the *Lancet* as one of Australia's thirteen most significant medical research achievements of the twentieth century. The research database Professor Dwyer and his team collated now comprises comprehensive health details on more than 11 000 Tasmanian babies and their mothers, and is currently being used to find ways to prevent other significant diseases including cardiovascular disease, osteoporosis, diabetes and asthma.

Professor Dwyer is chairman of the CSIRO Health Sector Advisory Council and chairs the Advisory Committee on Health Research for the World Health Organisation's western Pacific region. He is also national chair of the Gulf War Veterans Study Scientific Advisory Committee and a member of the National Health and Medical Research Council Research Advisory Committee.

In 1994 he was invited to Oxford as a fellow of Green College and in 2000 he received a Global Health Leadership Fellowship from the World Health Organisation.

Professor Dwyer is currently on a six month secondment at the National Institutes of Health in Washington. He will coordinate a new US study of 100 000 babies who will be followed to the age of twenty-one to obtain knowledge about how various environmental, social and genetic factors contribute to childhood disease.

## CROSSING THE URBAN-RURAL DIVIDE

BY MELANIE VAN TWEST

OUTLOOK PRESIDENT 2003-04

THE PHRASE 'RURAL health crisis' is popular in the daily press and on the parliamentary floor. We are treated so regularly to media announcements of new policies or schemes designed to fix the crisis that we are in danger of accepting the situation. Like the road toll (carnage on our roads), or asylum seekers (border protection issues), or social security recipients (welfare accountability), the phrase 'rural health crisis' has largely sanitised and de-humanised the crisis itself and we have lost sense of what it really means.

People living in rural and remote Australia understand what 'the rural health crisis' means. It means not having a doctor, or a dentist, or any sort of allied health practitioner within easy access ('easy' being within a couple of hours' drive and a couple of weeks' wait for an appointment). It means that when they do consult a health practitioner, their condition may have deteriorated further due to the time delay, or be more difficult to treat due to a lack of facilities. It means they may have to leave their home and family to travel to a major centre to seek care—or their family must travel and find accommodation to be with them. And these are only the most obvious issues. Those of us brought up in urban areas have a poor understanding of the constraints within which our rural population seeks health care.

I use the term 'health practitioner' quite deliberately. The crisis in rural health does not only concern medical practitioners—professionals in all the health sciences have vital roles to play and are in demand almost everywhere. The much-publicised government support to schemes and organisations aiming to place more rural medical practitioners only partly addresses the problems: a country GP can do little without the appropriate support provided by other health professionals.

So why is there a health crisis? Why are professionals so reluctant to 'go bush'?

Although rural health practitioners in many fields frequently state that they could not imagine a more worthwhile and enjoyable career, a prejudice against rural practice exists among many urban practitioners. Most students are trained in the capital cities and so the absorption of these prejudices, and the adaptation to an urban lifestyle, can become permanent, even for those of rural origin. The perceived professional and personal disadvantages of a rural practice then begin to outweigh other career considerations, and the 'crisis' becomes just another phrase—and someone else's problem.

Outlook is a student organisation that aims to redress this situation by providing education, information and resources about rural, Indigenous, international and urban/social health issues to students in all health science courses at the University of Melbourne. We encourage all students to think about doing something different with their knowledge and skills by providing them with opportunities to learn about areas that do not always form part of the curriculum. A large part of our activity is directed towards encouraging students to find out more about rural practice in their field, in the hope that they may consider spending at least part of their professional career in a non-urban environment. Outlook tries to break down the prejudice against rural practice by helping students to find out for themselves—and make up their own minds—about being a health professional in a country setting. We try to show that the issues are actually about real people.

Despite the seriousness of the above, we have a good time—Outlook's activities are many and varied. In 2003 we averaged almost one event per week of semester, which was a real achievement. Our regular staple is the lunchtime speaker meeting, which in the last year has included presentations on issues including:

- living with HIV/AIDS
- services provided by the Victorian Aboriginal Health Service in Fitzroy
- working as a physiotherapist in the Top End



- living and health conditions for asylum seekers on temporary protection visas
- an introduction to Koori heritage and culture
- mental health issues for health students and practitioners, and where to seek help.

Evening presentations have included an elective night, Médecins Sans Frontières, Red Cross, and a Nepal night. Then there's the annual dinner, film nights and social nights. Weekend trips to Echuca, Shepparton and, this year, Wangaratta, include visits to local hospitals, presentations from local health practitioners, and a chance to experience the rural lifestyle. Those who attended the eight-day South Australian road trip last Easter certainly enjoyed their time, and we are planning a similar excursion in eastern Victoria this year.

Our regular *E-News*, sent to all members electronically, includes information on forthcoming events and opportunities to attend conferences, seminars and other events our members may find valuable. We work with the Department of Health and Ageing to promote rural medical scholarship schemes and support their recipients. We also work actively with the National Rural Health Network (NRHN) to lobby the government to provide similar schemes for nursing and allied health students across Australia.

Outlook has strong and regular involvement with the Rural Workforce Agency Victoria (RWAV), the Victorian Universities' Rural Health Commission (VURHC) and with rural health clubs at other colleges and universities.

Our link with NRHN incorporates monthly teleconferences, bi-annual meetings and the annual National Undergraduate Rural Health Conference. This is always a very valuable experience, both for the individuals and for the club. We are currently planning to co-host the 2005 conference with other Victorian rural health clubs and agencies—a huge undertaking, but one about which we are very excited. Outlook is also assisting NRHN with the establishment of GAP—the Graduate Assistance Program—which aims to help graduates, particularly of medicine, maintain their interest in rural practice in the years between graduating and completing post-graduate qualifications.

Not least, Outlook is actively involved in supporting and promoting the new rural clinical school as well as working with the newly-formed rural clinical school health club, Moovin' Health, to provide support to those students who have already made the break to a country lifestyle.

At the end of the day, it is the individual who decides where they will practice—and the range of influences upon this decision is enormous. Through Outlook we hope to give future health practitioners a positive introduction to a potential rural health career, so that they can make up their own minds about where they want to work. While we will have difficulty in measuring our success, we certainly know that those taking part in our activities enjoy them immensely—which is a good beginning!

## Medicine: not just science

BY JORDAN KAMEL

AT FIRST, I had trouble choosing an Advanced Medical Science (AMS) unit that would suit me. The thought of a year of lab research was not particularly appealing. In fact, after two and a half years of medical lectures and tutorials, the thought of any science related study made me cringe. Although I have always loved science, I needed a break, so when the Centre for the Study of Health and Society (CSHS) gave us a talk about doing medical humanities, I found the unit for me.

The medical humanities unit is half coursework and half the undertaking of a research project. For the first time in my university life I was given the luxury of selecting my subjects. Ecological History of Humankind and Sustainable Development are run by the Faculty of Arts and, although of limited relevance to my research project, they fascinated and challenged me in a new way. Any stereotypical idea I had about arts being a 'bludge' was swept away as I found myself working harder than ever, learning about the role that disease has played in shaping history and how the way we live now will impact on future generations. Other subjects I took were Bioethics: the Fundamental Debates, and Qualitative Health Research (QHR), both run by the CSHS, a very helpful and close-knit department. Bioethics was centred on specific medical issues such as euthanasia and abortion. Although the medical curriculum



JORDAN KAMEL

does contain a small medical ethics component, bioethics really sparked my interest, as it delved much deeper into the various issues. QHR, the only compulsory subject, proved very useful in developing my research skills.

The second semester of AMS was completely dedicated to my research project. After a long process refining my topic, I decided to look at how governments and organisations can ensure access to an HIV vaccine in the future. I researched the work that has been done by groups such as the International AIDS Vaccine Initiative (IAVI) to make sure that people in both industrialised and non-industrialised nations will receive an HIV vaccine as soon as one becomes available. Although such efforts are highly credible, I realised that much work still remains to be undertaken to prevent future vaccines from following the failed, historical paradigm of pharmaceutical access, where distribution is based on the ability to pay and not on need. This topic allowed me to incorporate many of my interests regarding public health, such as the AIDS pandemic, human rights, health inequalities and access to medicine. With the guidance and support of my wise supervisor, Dr Alison Brookes, I was able to engage in a detailed analysis of a body of literature, something I had never done before. With the future possibility of having papers published in journals, it has been encouraging to try and become an expert on a particular topic, even if only on a very specific area.

I have learnt much from my AMS year, not just about the contents of my subjects, the topic of my project, or how to skim read vast amounts of text, but also about how medicine relates to the rest of the world. For medicine is not just about science, it is also about life. My AMS year has given me the opportunity to look with a broader perspective and place medicine in its relevant context in society. I feel that appreciating this is an important step in becoming a well-rounded doctor in the future.

## A Norwegian view of medicine at Melbourne

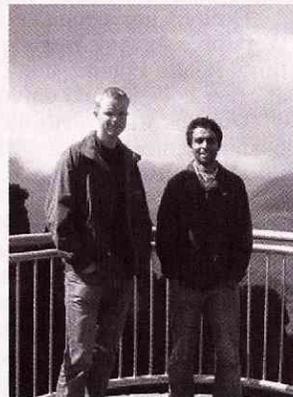
BY TAHIR RIAZ AHMAD

ON 15 JULY 2003 two students from Norway arrived at Melbourne International Airport. In sharp contrast to the 35°C and fresh sea breeze we were expecting, we were greeted by 8°C and strong wind accompanied by rain. Matters were not made better when we discovered that Oslo was having its hottest summer on record.

The exchange program between Oslo and Melbourne is for the paediatrics and obstetrics and gynaecology rotations and we commenced with paediatrics at the Royal Children's Hospital.

The time spent in paediatrics went by in a flash, with a lot of essential time spent in outpatient clinics and tutorials. One striking difference between the teaching styles of Oslo and Melbourne was that in Oslo we spend tutorials seeing a variety of patients already prepared for us by a tutor instead of a more theoretical approach. In Melbourne, though, we had more opportunity to rove around the hospital wards equipped with a pager and stethoscope.

The women's health course at the Royal Women's Hospital followed the ten weeks of paediatrics. We were exposed to a range of patients and were allowed to interact with and examine



EINAR DALE (L) AND TAHIR AT KATOOMBA

them. The lectures here were amalgamated into two weeks of intensive study, which really tested our stamina and endurance. We were happy to dispel the myths about sinister midwives trying to inflict long-term psychological damage on defenceless medical students. We survived our delivery week and, contrary to rumours we had heard, found many of the midwives very pleasant!

After tending to the ill in hospital, we also took some time off for extracurricular activities. Mostly we travelled during the weekends and saw great places like Sydney, Brisbane and Alice Springs. We also travelled along the Great Ocean Road, which was an amazing experience, and so were the cute little penguins on Phillip Island. Einar became an active member of the University of Melbourne mountaineering club and spent his time skiing in the mountains, which resulted in him conquering an unknown number of unknown peaks. I, on the other hand, spent my time playing tennis and soccer with students from other faculties and kept my feet safely on the ground. We concluded our travel by doing a five-day scuba diving course in Cairns (my mother worried I would be eaten by a crocodile).

'Time flies' is as much an understatement as it is the truth, especially if you are trying to cover the year five medical curriculum and a country the size of Europe. This exchange program was a fun and challenging experience. It brought out our strengths and weaknesses and allowed us to learn from them. Even though the weather in Melbourne was preposterous (during the winter semester, I have to add), we will have no problems in recommending this outstanding experience to our fellow students in Oslo.

## PETER G JONES ELECTIVE ESSAYS

The UMMS Elective Essay Prize, established in 1993, was renamed the Peter G Jones Elective Essay Prize in 1996 in memory of Peter G Jones, founding editor of *Chiron*. Each year, up to three prizes of \$100 are offered to final year students for the best essays describing their personal and professional experiences during their elective. Winning

essays are also considered for publication in *Chiron*. Three prizes were awarded in 2003: Rae Watson-Jones for her essay, *A Nation of Children*; to Henry To for his essay, *Two views from the Difficult House*; and to Annie Fonda for her essay, *Meeting, Greeting and Treating*. Edited and abridged versions of all three winning essays are presented here.

### A Nation of Children

*An Elective in Rural Zambia*

BY RAE WATSON-JONES

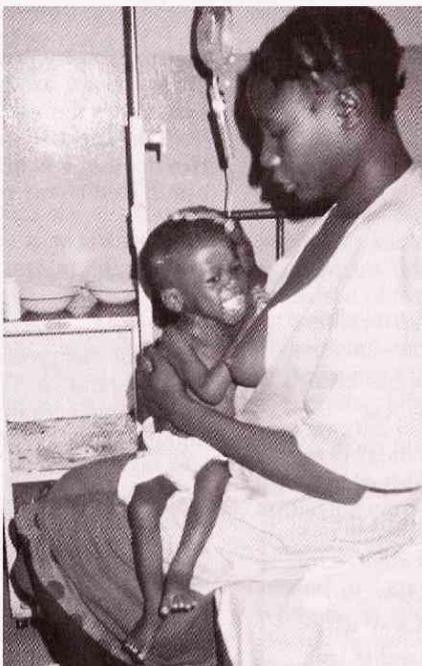
**M**Y EYES STRAYED towards the clock. Almost one o'clock, when the noisy gong would signal lunchtime. Full rounds on 'Paeds 2' always took a long time. The forty-bed ward was invariably full.

A noisy new admission entered the ward. The mother, skinny and weary, carried two babies, one in a *kasapi* on her back. He looked plump and contented. The other was older but blatantly malnourished. He wailed and squirmed pathetically. The mother sat down on the bed, her eyes downcast. 'He's been like this for several weeks,' she explained, 'there's just no food at home'.

It was the usual story: older brother displaced from the breast when the new baby (now ten months) came along. Poor crops combined with unfortunate family circumstances meant there was little food. At two the child was the same weight as his baby brother. A nurse appeared with a steaming cup of *kwashi* porridge. Our patient snatched it from her hands and gulped it down as fast as he could. We watched in saddened silence as the hungry child consumed the bland, nutrient-fortified mixture.

I did my elective at Mukinge Mission Hospital in Zambia. Twelve hours by road from the capital Lusaka and set among lush hills with fantastic views, the hospital is an idyllic setting for a retreat. And in a curious way it is a kind of retreat for the patients—beds, running water and food three times a day—conditions that Zambian villagers just do not have. City dwellers and people from neighbouring Congo or Angola fly to Mukinge for treatment. Other patients arrive at the hospital seriously ill, referred from the appalling rural health clinics because of failed 'treatment'. The Zambian government hospitals are also notorious for their 'bring-your-own' service: needles, syringes, drugs, IV fluid, dressings—even orthopaedic screws! In comparison, Mukinge is very well stocked because of a steady supply of overseas donations. Patient fees are nominal and can even be arranged in vegetables if cash is hard to come by!

Like rural areas worldwide, however, Mukinge has a shortage of health professionals. There were only three doctors responsible for the two hundred inpatients at the hospital. In my medical student career I have been on countless ward rounds but the details of patient management had always remained a mystery. Suddenly, those details became very important and I was the one expected to make the clinical decisions! It was highly stimulating, especially as I began to recognise the



DANNY, NEARLY THREE YEARS OLD, GAINED ALMOST FOUR KILOGRAMS DURING HIS ADMISSION TO HOSPITAL. HIS FATHER IS SICK AND HIS MOTHER FINDS IT HARD TO FARM WHEN SHE NEEDS TO RETURN TO THE HOSPITAL SO OFTEN WITH DANNY.

patterns of the common tropical diseases and gained more confidence.

I found the paediatric wards most engaging. But working in these wards became more meaningful after I noticed a particularly sinister thing: the patients at Mukinge are young, generally no older than forty. How does a national life expectancy become thirty seven years? I was seeing it for myself—abscesses that wouldn't heal properly, overwhelming infections, strange unexpected deaths, all due to the insidiousness of HIV. Wailing from the mortuary could be heard at least once a day. Another death ... of a parent, a child, a breadwinner. Every Zambian I asked had lost at least one sibling or cousin to AIDS. And so many orphans! Most families had two or three orphans as well as their own children to look after.

Should Zambia's current mortality rate continue it will become a nation populated by children. Their paediatric population is already disproportionate: half of all Zambians are less than fifteen years old. A third of these children have lost one or both of their parents to HIV/AIDS. If having no parents isn't enough, surviving childhood in Zambia is a battle in itself. During my first ten days at Mukinge we lost a child each day to malaria. Pneumonia,

sepsis and diarrhoeal disease were also rife. And underlying every disease was, of course, the ubiquitous malnutrition.

On occasion I felt completely depressed by the situation. Overwhelming poverty, inadequate infrastructure and lack of access to quality primary care perpetuate the mortality rate and the poor standards of health. Was the hospital really making any difference? 'Absolutely,' I was reminded repeatedly by hospital staff, 'eradicating poverty is a slow process and in the meantime we can save a lot of lives'. They were right of course. The hospital sends many children home well and these children are vital to the future of their country.

The new patient on Paeds 2 recovered well. After the first day, he stopped crying. By the end of the third week he had gained several kilograms and began to run around like a normal two-year-old. It was a joy to see such dramatic improvement with such simple, cheap treatment. I will never forget the look of gratitude on the mother's face as she was discharged with her two healthy children.

I could not remain detached from the situation I saw at Mukinge. The Zambian nurse in charge of Paeds 2 was thrilled by my enthusiasm. Like many other staff members she was distressed by the evolving crisis and was moved to do something to help. Her vision is to establish an orphanage in the Mukinge

area, where orphans are supported in their villages. Many of the malnourished children on Paeds 2 are orphans whose adoptive families cannot provide for them properly. These children tend to have repeated admissions and often die before age five. If they could be cared for, clothed and fed, they could have the chance to live, attend school and make a meaningful contribution to their society. But in Zambia ventures like this need outside support and awareness needs to be raised overseas. 'So you can be very useful to us, even in Australia', she concluded.

My elective was a sobering experience but it was a privilege to see firsthand the social and medical crisis facing sub-Saharan Africa. Now, more than ever, I understand that the practice of medicine cannot be separated from lifestyle, cultural and social factors. I'm glad I became involved in the orphanage project. Now, when I hear about the growing number of orphans in Zambia and elsewhere, I'll know I'm doing something about it.

*If you would like more information about the Mulunda Miaka Orphan Home please contact Rae at: raewj@yahoo.com.au.*

## Two Views from the Difficult House

*Atoifi Adventist Hospital, Atoifi, Malaita, Solomon Islands*

BY HENRY TO

Date: 22 Jan 2003  
 Name: Benjamin Namelaetae  
 Age: 1 year 3/12  
 Village: Unknown  
 Region: East Kwaio  
 Religion: Heathen  
 PC: Baby presents with 3/7 Hx of fever, unwellness and lethargy, with decreased appetite. 2x vomiting today, no diarrhoea, urine has been normal. Has had 2 convulsions this AM, parents describe fits lasting 1 minute each.  
 PMHx: First admission, no previous immunisations.  
 Social Hx: First child, village is 4 hrs walk within the surrounding mountains.  
 O/E: Temp: 40.1°C, HR 160, RR 80, wt 8kg (below 5%). Child is very lax and extremely drowsy with rapid respirations. Looks scrawny and is pale.  
 Resp: No stridor, accessory muscle use with marked costal recession and indrawing. Chest is clear.  
 Abdo: Lax and non-tender.  
 Imp: ?Cerebral Malaria  
 Plan: Malaria thick and thin films  
 For Dr to review

that my son had stopped breathing. The *waku* pressed my son's chest inward as the *areokwai* tried to hold a green bag over Benjamin's mouth.

The world around me faded to a haze. I could only see these two doctors trying to give my son back his spirit. 'My gods have not looked kindly today', I thought.

### Second View

It was my second week at Atoifi. I was enjoying the tropical Solomon Islands: a sunny, relaxed atmosphere, distant waves breaking on the coral reef and a hospital with a view of the beautiful mangrove-lined harbour. I had no clinical experience with Malaria or TB, common diseases here, found it difficult to communicate in Pijin and Kwaio, and was still apprehensive about making medical decisions when all I had previously done was take histories.

Atoifi Hospital (Kwaio for 'difficult house') is a remote mission hospital of sixty beds overlooking Uru harbour on the eastern part of Malaita Island. It was built in the 1960s by the Seventh-Day Adventist church and is staffed by locally trained nurses and one resident doctor. It suffers the effects of the nationwide debts and a lack of funding—medical supplies were down to a bare minimum and over half its funds went to run the diesel generator required for electricity.

In the outpatient examination room, nurses crowded around a young mother holding her baby. 'This baby came in about half an hour ago. We think he has malaria', the senior nurse said.

The mother was thin and dressed in a long, dirty dress. She clutched a bundle of muddy cloths containing her baby. The small brown heap was lax, his arms fully outstretched. His mother supported his head as he gasped for breath. 'Please call Dr Ron to the children's ward right away', I said.

I called the paediatric nurse to help: 'We need to get oxygen and get IV access for quinine', I said. She went to get the (only) oxygen concentrator. I thought about other possible diagnoses. Asthma? Bronchiolitis? Meningitis?

'Maybe we can try doing a BSL', the nurse said, as she pushed the large machine.

Of course! What a dramatic oversight. BSL 2.1mmol. 'We really need IV access. Can we please try', I said to her.

Pale child, cool extremities, collapsed veins.

'We only have 16g needles', the nurse replied.

I tried to fix the hospital's only adult prongs on to the struggling baby. Dr Ron arrived. An elderly, American-trained gentleman with twenty-three years experience in Ghana. I gave him the brief Hx.

'There is no way of knowing what this is', he said. 'If we can't get IV access, give in quinine 100mg and try an NGT for some glucose. There's nothing else we can really try now'.

The nurses ran to get more equipment and medications. The

### First View

I HAD WALKED for four hours from my village to the mission hospital. My only child had been sick for three days. Only the experienced and organised *areokwai* (whitemen) at the hospital could cure this problem.

While I talked to the nurses a young *waku* (Chinese man) came in. He talked to the nurses then became flustered and beckoned us into another room. The nurses all had a distant look in their eyes and seemed to know something that this *waku* did not.

They pricked Benjamin's finger, clipped something onto his hand and put some tubes up his nose. They searched and searched his hands then put a tie on one. The *waku's* sense of urgency troubled me. He held the tubes in Benjamin's nose even as my son struggled against them.

An older *areokwai* arrived and looked pleased as my son's breathing slowed. Suddenly, the machines stopped and I saw

O<sub>2</sub> sat. was dropping despite oxygen, but could I trust the ill-fitting machine? I kept searching for veins, but nothing. The im quinine was finally given, and fifty per cent dextrose, via the inserted NGT. There were no hospital protocols here. It was a matter of trying anything that worked.

Suddenly the power went out and the O<sub>2</sub> machine stopped. The baby's respirations stopped also. We commenced CPR. There was no laryngoscope or ET tubes. Without power the suction machine was not working. The only bag, with an adult size mask, did not provide a good seal for airflow. The only medications at hand were out of date.

I rapidly pressed the baby's chest with my thumbs and thought about how futile this exercise had been. Dr Ron stopped bagging. It was 15:55. My hands relaxed and I slowly stepped back. The nurse explained to the bewildered mother what had happened.

Outside, my mind raced with 'if only's': if only I had acted faster and thought sooner; if only we had more needles; if only the power had not cut out; if only everyone had a sense of urgency; if only it was not time for him die.

Out on the harbour was a ship carrying medical supplies. We had been expecting it for over a week.

I heard the sound of crying. A mother had lost her child and I had a new perspective on the world.

*This essay is dedicated to the late Lance Girschbach and his family. I would like to acknowledge the fighting spirit of the staff at Atoifi Adventist Hospital, especially Dr Lemuel Lecciones. Despite further funding difficulties, civil unrest and the brutal murder of an Australian missionary in the area in April 2003, Atoifi Hospital is still operating as the primary hospital in Malaita today.*

*For further information, please contact: [www.adventist.org.au](http://www.adventist.org.au) or [ashyr1@yahoo.com.au](mailto:ashyr1@yahoo.com.au)*

## Meeting, Greeting and Treating

*An elective in the remote Aboriginal community of Mt Liebig*

BY ANNIE FONDA

**A**MINARI SITS CROSS-LEGGED in the red sand in a floral dress and green woollen beanie. She sings the old songs of her people, in her language, Luritja, hands clapping, eyes focused on the distance. Ninety-three years old, taking no medications, her robust organs sustain her vitality after formative years nourished by bush tucker: lizards, kangaroo, emu, witchety grubs and berries. In her early days, this old lady was a 'naked one' in the desert. Now she sits in the old people's home, surrounded by her motley crew of dogs and her *nali-nali* stick, a true elder carrying a wellspring of knowledge and experience. As we sit, looking at the stunning mountain backdrop, watching the naked kids running around and riding their bikes, the occasional teenage petrol sniffer walks clumsily by.

Although we had been prepared with an artillery of facts about the Aboriginal health crisis and life in remote communities, it was still a shock to enter the health clinic four hours from Alice Springs. A blend of central station, emergency department, pharmacy and hang-out space, the clinic is the place to meet, greet and treat the residents of Mt Liebig. In the vast expanse of the central-western desert, this small Aboriginal community of 300 lives in government-built homes, surviving on welfare.

With nurses for bosses and doctors far away on the phone, my bush medicine elective involved a rapid re-think of preconceptions and an enriching experience of Aboriginal culture. In the five weeks I and a fellow student stayed in Mt Liebig, I learnt a great deal about Aboriginal people, health care, the land and myself.

Listening to their stories and songs, I was filled with respect for these people. Working in the clinic and reading patient histories of disease upon disease, I was also filled with sadness and frustration.

Many assumptions are made about the way Aboriginal people behave, without asking what they think. In medical school we are taught to use the skills of looking, listening and feeling in our clinical examinations. If we were to listen to Aboriginal stories, we would be in a better position to provide the care these people need. We would understand that headaches, for example, are traditionally thought to be the result of sorcery and that Panadol, the great panacea, is regarded as a magical tablet. We may be surprised to discover that germ theory hasn't made it this far and that infection also comes under the category of sorcery.

The rubbish tips in people's front yards, where the family sleep and the children play, are no myth. Nor are the enormous number of debilitating boils, and chronic ear infections are

so common it is rare to see an eardrum. Such infections are controllable by simple hygiene measures, but you've got to believe in such measures to act them out. Somehow the right moment for community discussion about bacteria and viruses as causes of disease has not occurred.

I believe that the finest tool is still up our sleeve—the soul of medicine—the 'clinical examination'. A greater understanding of Aboriginal peoples' viewpoints is crucial to understanding the crisis. Lifestyle-induced problems result from different conceptions of hygiene, diet and exercise. It is true that most illness is related to people *choosing* to eat sugary food, to not have refrigerators in their homes, to sit around all day talking or playing cards. A level of knowledge and education we take for granted is needed, however, for these to be true *choices*.

Take diabetes, for example. It is normal to be walking around Mt Liebig with a blood sugar level in the twenties. While most adults take a cocktail of blood pressure, lipid and glucose-lowering agents, there is very little awareness of why these medicines are necessary. Happy to take the 'magical Western pills', because they believe it when we say they are good for them, people simply don't understand that eating lots of sugary food and not exercising enough increases the sugar in the blood and damages the body, despite medication. Try as we might to encourage lifestyle modification, it makes no sense to these people. They continue to consume tinned meats, packets of chips and soft drinks (and feed these to their babies) because they taste so good and are packaged so enticingly. On a witchety grub (*maku*) hunting trip with some of the women, I saw a beautiful transformation as these big bodied women went smiling into the desert. While their normally inactive bodies were digging away earnestly for hours, this medical student gave up, opting to sleep under a tree.

At the end of the day I would often feel overwhelmed. Life in this community is full of complexities and contradictions as the people struggle to adapt to white ways. The *whitefella* lifestyle has severely challenged the community's natural coping skills and the grog, petrol, junk food and gambling appear to be winning out. The health care system struggles to deliver adequate care.

The problems of teenagers who sniff petrol and suffer recurrent bouts of STDs, babies who fail to thrive, husbands who drink and beat their wives are balanced by a rich knowledge of the earth, celebration and ritual, dreamtime stories through song and art, strong kinship connections and sleeping under the desert stars at night. No-one is far from trauma and suffering, yet a spirit endures beyond all the problems and the people radiate a touching warmth, humour and strength.

## To be a GP Teacher

BY CAROLINE JOHNSON

**I**STILL REMEMBER my first visits to a general practice as a fifth year student. How refreshing it was to escape the impersonal, austere hospital teaching environment and meet patients in the real world, to see a doctor practising patient-centered medicine and to begin to see patients as real people and not just a set of diseases for me to prod and probe. How great to know that it was possible to be a generalist in medicine and still pursue a special interest—and be needed and appreciated within your local community.

That is one of the reasons I became a general practitioner. I realised it was not a career you did just when you couldn't do anything else. General practice calls for a special commitment, a sense of vocation and service, and an ability to think outside the square, to deal with diversity and to be content with doctoring despite the unlikelihood of a huge income or hero-status.

How much harder is it for today's students? With university fees, negative portrayals of general practice in the media, and the increasing complexity of the medical specialties (making the idea of being a generalist daunting), how can we expect the most talented graduates to choose a career in general practice?

This is why I teach medical students and why my practice regularly takes students on clinical placements. The time pressures are great, the financial rewards barely cost-neutral,

but the opportunity to share with a future doctor the positive aspects of my profession is a privilege and a pleasure. For me it is a professional responsibility. For our patients, the future of general practice depends on it!

*Caroline Johnson is a GP in Surrey Hills and a lecturer at the Department of General Practice*

### Attention enthusiastic GPs!

*The Department of General Practice at the University of Melbourne is recruiting general practices to take undergraduate students for clinical placements in 2004 and beyond. Involvement can be as little as three days or up to fifteen weeks a year depending on your level of interest and availability. Earn CPD points and PIP payments (up to \$500 a week per student).*

*Our need to place final year students for 2004 is URGENT. The student experience of general practice is vital if we are to recruit the best and brightest graduates to our profession.*

Please contact Dr Caroline Johnson on  
email: [c.johnson@unimelb.edu.au](mailto:c.johnson@unimelb.edu.au)  
or telephone: 8344 7952 for more information.

### ROBERT L SIMPSON MEMORIAL PRIZES 2003/2004

Four prizes were awarded for 2003/2004: to Anna Lithgow, Katie Hogg, Alexandra Stanislavsky and Kirsten Scott.

Anna spent her elective in Harry William Hospital, Cochabamba, Bolivia, undertaking a rotation in general medicine as well as a small population health study on infant and maternal mortality.

Katie spent her elective performing the initial analysis of a data set collected by the Microbiological Diagnostic Unit, Melbourne, relating to respiratory viruses in Victoria.

Alexandra travelled to the island of Yap, Federated States of Micronesia, to assist with basic health care and

community education as well as to explore similarities between the health problems of Micronesians and those of Australian Indigenous communities.

Kirsten travelled to Wyndham in the East Kimberley, WA, to assist with initiatives such as immunisations in the hospital, the community health centre and remote area clinics.

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.

### 2004 MELVILLE HUGHES SCHOLARSHIP

The 2004 Melville Hughes Scholarship has been awarded to Dr Angela Webb (MB BS 1996), plastic surgery registrar at the Royal Children's Hospital, for her proposed research entitled 'Tissue regenerative capacity of adult skin stem cells *in-vitro* and *in-vivo*'.

The fundamental objectives of Dr Webb's project are to investigate how to optimise the generation of skin in the laboratory, and to identify modifying factors that could be applied to patients to augment their wound healing abilities. Both stem cells and extrinsic factors have great potential in the treatment of blistering skin disorders, severe burns and leg ulcers. Thus, after isolating the stem cell population within the skin's outer layer, investigations in the laboratory and in animal models will be performed on these cells to refine *in vitro* generation of skin. Factors that improve cell growth will then also be investigated as possible therapies for patients with skin wound problems.

The \$55 000 scholarship is offered to medical graduates undergoing further research training in the discipline of surgery. It was bequeathed to the university in honour of Melville Rule Hughes, an alumnus of the School of Medicine (MBBS 1915), who was killed in action in France in 1916.



ANGELA WEBB WITH HER HUSBAND AND PARENTS AT THE PRESENTATION OF HER MELVILLE HUGHES AWARD

# THE MACFARLANE BURNET INSTITUTE FOR MEDICAL RESEARCH AND PUBLIC HEALTH (BURNET INSTITUTE)

BY PROFESSOR STEVE WESSELINGH

*Director, Burnet Institute*

**V**IRUSES ARE AN ongoing threat to the health of the world's population. Pressing global health issues such as the sudden outbreak of SARS last year, the continuing spread of hepatitis, the ever-growing number of HIV infections, particularly in poorly resourced countries, and the appearance of new strains of influenza highlight the need for the ongoing focus of the Burnet Institute on all facets of virology. The institute is tackling these health catastrophes with high quality fundamental research whilst also offering public health programs to communities both in Australia and overseas to cope with the social and health problems that such diseases can bring.

The Burnet Institute has two major areas of research:

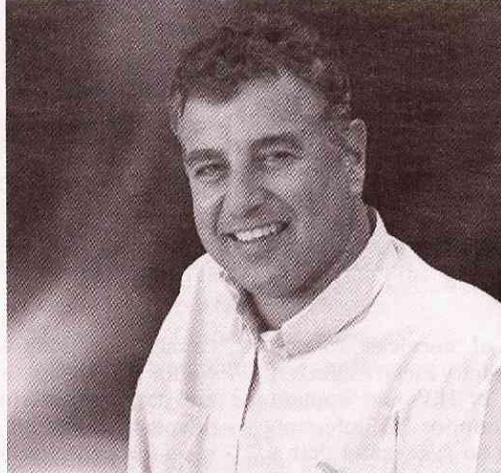
- research into the mechanisms by which viruses infect humans and cause disease, with the aim of developing new methods to prevent and treat viral disease; and
- investigation of the processes by which infectious diseases spread within the community and the development, implementation and evaluation of community-level public health action to address important infectious diseases in areas of need, principally in Australia and the Asia-Pacific region.

The early history of the Burnet Institute is linked closely to the Fairfield Hospital for Infectious Diseases. The hospital was founded at the turn of the twentieth century when epidemics of infectious diseases such as diphtheria, scarlet fever and polio were rampant. A virology laboratory was then established at the hospital, in 1950, to undertake clinical, diagnostic and research services for the many patients with viral infections. This initiative was enthusiastically supported by Sir Frank Macfarlane Burnet, then director of the Walter and Eliza Hall Institute of Medical Research and honorary consultant epidemiologist at Fairfield from 1947 until his death in August 1985.

With the emergence of the HIV epidemic in Australia in the early 1980s, Fairfield Hospital, with its virology laboratory, was well placed to become one of the primary centres for patient care, diagnostic services, public health reference and research into HIV/AIDS in Australia. The then director of the virology laboratory, Professor Ian Gust, proposed that the virology research functions be transferred to an independently managed research centre at the hospital.

In 1983, Sir Frank Macfarlane Burnet became the founding patron of the new centre and, following his death, the virology research centre was named the Macfarlane Burnet Centre for Medical Research (later changed to the Macfarlane Burnet Institute for Medical Research and Public Health). The legal association with Fairfield Hospital was changed in 1989 with the incorporation of the centre as a company limited by guarantee.

In June 2002, the Burnet Institute relocated to the Alfred medical research and education precinct next to the Alfred Hospital. Since then we have developed a strategic five-year plan to guide the development of the institute. There are now three laboratory-based thematic programs: Virology, Vaccine Development and Pathogenesis and Clinical Research; plus three field programs: Centre for International Health, Centre for Harm Reduction, and Epidemiology & Social Research.



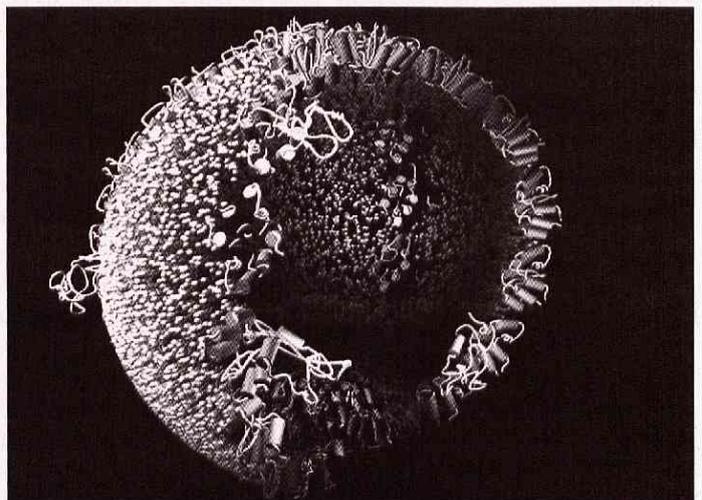
STEVE WESSELINGH

Basic research has underpinned most of the major scientific discoveries that we have today. Our virology program aims to better define the replication processes of human viral pathogens and their closely related viruses through fundamental research. Strong emphasis is placed on understanding how viral pathogens manipulate their respective host cells to promote viral replication, virus production and viral persistence.

The development and use of vaccines has been recognised as the most effective way to reduce the level of viral infections in the community. Our vaccine development program aims to respond to three major international health problems of our time: HIV, viral hepatitis and measles.

Different groups within the institute are collaborating with the aim of focusing our collective expertise on problems and issues related to the development of vaccines against these viruses. One of our recent additions to this program is the development of an edible measles vaccine that is easy to administer and cheap to produce. These vaccines have the potential to redress many of the production, distribution and delivery limitations faced by traditional needle-based vaccines in developing countries.

The pathogenesis and clinical research program focuses on research aimed at providing a better understanding of how HIV causes AIDS. The areas covered within this program include neuropathogenesis (including HIV-related dementia and peripheral neuropathy); the role of macrophages in HIV pathogenesis (in particular their role in HIV persistence and the mechanism of defective phagocytosis leading to opportunistic infection); immunopathogenesis of HIV and hepatitis B infection (including effects of HIV on T-cell turnover and thymic function); the role of protective antibodies in HIV pathogenesis and molecular pathogenesis studies with a particular emphasis on HIV co-receptor usage.



A MODEL OF THE STRUCTURE OF DUCK HEPATITIS B VIRUS, SHOWING THE ARRANGEMENT OF THE SMALL (S) AND LARGE (L) ENVELOPE PROTEINS IN THE LIPID MEMBRANE OF THE SUBVIRAL PARTICLE.



TIBETAN WOMAN ENJOYS SIMPLE ACCESS TO WATER

This program provides a number of services to the community including antiretroviral drug toxicity for HIV infected individuals, the molecular epidemiology of HIV and applied clinical research into low-cost assays to monitor HIV infection in resource-poor countries. This has been so successful that a number of our staff have taught Indonesian scientists how to perform the low cost CD4 assays in Denpasar, Bali, with similar collaborative projects also underway in Chennai and Mumbai, India. Another important service is the HIV-1 viral load and HIV-1 genotype analyses for patients at the Alfred Hospital and in high case-load general practices in Victoria and Tasmania.

A unique feature of the Burnet Institute is our public health programs, based within the communities in Australia and overseas. Our Centre for International Health (CIH) is involved in a broad range of health development activities primarily in the Asia-Pacific region and Africa as well as training and education courses in Australia. The CIH has five international offices: Bali, Indonesia; Bangkok, Thailand; Vientiane, Laos; Suva, Fiji; and Rangoon, Myanmar.

Within a community health context in resource-poor countries, the CIH designs, implements and evaluates public health programs, frequently in partnership with local and international organisations. Their main areas of focus are communicable disease control (primarily HIV), women and children's health, and primary health care, nutrition, mental health, injury prevention, and the prevention of low back pain. In addition to its project work, the CIH's staff members undertake short-term consultancies in program design and evaluation, policy development and technical advice. It is through the work of the centre that the Burnet Institute has its AusAID non-government organisation accreditation.

*A major aim ... is to encourage development of rational, evidence-based drug policies that avoid judgements about personal behaviour and have the reduction of harm as their primary aim.*

Illicit drug use is one of the major causes of the HIV and hepatitis C epidemic in the Asian region. Our Centre for Harm Reduction (CHR) brings together people from around the world with expertise in the prevention of drug related harm. A major aim of the CHR is to encourage development of rational, evidence-based drug policies that avoid judgments about personal behaviour and have the reduction of harm as their primary aim.

Harm reduction is coming of age as the dominant, evidence-based, effective response to the problems associated with illicit drug use, especially that of hepatitis C and HIV among and from injecting drug users (IDUs). A long period of sustained advocacy, consultation, and production and dissemination of evidence, of which CHR has been the major agency in the region, is finally leading to the recognition of the importance of the hepatitis C and HIV epidemics among IDUs.

The CHR stands at the forefront of this cutting edge movement in a myriad of ways—in the development of its philosophy and responses to drug-related harms, in the provision of technical advice, in education and training, and in building indigenous capacity. Working with the World Health Organisation, United Nations agencies, international non-government organisations and national governments, the centre is implementing programs, advocating with all sectors, providing technical assistance and research expertise regionally as well as globally.

*One of our recent additions ... is the development of an edible measles vaccine that is easy to administer and cheap to produce.*

Closer to home our Epidemiology and Social Research Program (ESRP) undertakes Australian-based research into the prevalence, transmission and impact of serious infectious diseases, including HIV, hepatitis C and chlamydia. Marginalised population groups (such as people who inject illicit drugs, prison inmates and culturally and linguistically diverse communities) are a particular focus. The ESRP is also responsible for maintaining the HIV/AIDS surveillance database for the Department of Human Services, Victoria.

Just as the research efforts of the Burnet Institute range from the most basic biochemical and molecular investigations in the laboratory to the surveillance of the health status of women and children in Tibetan villages, the educational role of the institute also covers a remarkable diversity of levels—from post-doctoral fellowships to educating Indonesian general practitioners and law enforcement agents about the fundamentals of harm reduction.

A great deal of the institute's laboratory and field research is undertaken by young researchers from Australian and international universities. We have many students undertaking post-graduate programs such as BSc Hons, Advanced Medical Science, Masters of Public Health and PhDs. We try to make all our students welcome, and have an ever-expanding calendar of social events and seminars to keep them even busier.

Since our relocation the profile and productivity of the institute has grown significantly as we continue to provide national and regional leadership in virology and public health. Both domestically and internationally we have seen a marked increase in the level of competitively acquired grants and contract funding received by the institute. Our infrastructure funding is also up and our output of peer-reviewed publications, research reports and consultancies is at a new high.

With our new facilities, the development of our strategic plan and the recent creation of three new spin-off companies to commercialise Burnet Institute intellectual property, we are well positioned for a new era of growth and outstanding scientific and public health achievement.

# GRADUATES, PRIZES AND AWARDS

## School of Medicine and School of Population Health Graduates 2003

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

Sameerkhan Alli Abdoolakhan, Nicholas John McDonald Agar, Luke Benedict Ainsworth, Subana Amirthanandan, Vinna An, Holly Silvana Anderson, Mary Ann Anderson, Seung Mee Bae, Michelle Louise Baker, Matthew Derek Barnes, Rakesh Beesoondoyal, Firuz Begic, Rachel Elizabeth Berry, Elise Eva Bialylew, Doron Boltin, William Hing Kay Bong, Andrea Jane Bowyer, Sarah Caitlin Boyd, Kylie Jennifer Bruce, Tina Dawn Casey, Rani Chahal, Hiu Tat Chan, Philip Chang, Ian Thomas Chao, Adrian Max Chazan, Luke Chen, Peter Meng Yan Cheng, Peggy Pei-Ju Chiang, Siang Suen Chin, Debra Pei Sonq Chong, Su Yuan Chou, Sally Chow, Bean Lii Chua, Ru Tein Chung, Ali Jilani Ayoob Coowar, Deepa Mary Daniel, Kate Elizabeth Darbyshire, Jai Nair LePoer Darvall, Timothy Michael Davis, Lisa Yolanda Derigo, Umaiyal Devarajah, James Dimou, Natasha Daureen Frawley, Samuel Patrick Frost, Eng Kooi Gan, Mayur Garg, Sangeeta Garg, Shou Chuong Goh, Claire Louise Goodman, Nathan Charles Goodrick, Benjamin Gerard Grave, Yi Qun Guo, Hai Vy Thuc Ha, Chao Han, Harianto, Dean Jeremy Harris, Edwina Caroline Holbeach, Allan Hsu, Johnson Hui Hsiang Hsu, Louis Li Huang, Mary Margaret Huang, Wing-Hung Hui, Kevin Hung, Justin Deane Jackson, David Januszewicz, Gaveen Shivakaran Jayarajan, Praveen Divakaran Jayarajan, Joanne Maree Jeffers, Cameron John Jeremiah, Navroop Singh Johal, George Kalogeropoulos, Elan Daniel Kaplan, Muthiah Kathirgamaarathan, Balvindar Kaur, Benjamin Kean Hin Keong, Vicky Hyun-Young Kim, Grace Sze Ling Koay, Mary-Ann Li Jun Koh, Su May Koh, Jereth Lee-Wen Kok, Shobana Krishnamoorthy, Mayur Krishnaswamy, Yu Mei Law, Vu Nguyen Le, Jeanette Lee, Joanna Lee, Laura Lee Nah, Loi Shee Michelle Lee, Louise Lee, Will Nicholas Lee, Yee Yan Lee, En-Ling Leung Ki, Sidney Matthew Levy, Jin Li, Fee Lien Sylvie Li Yim, Norene Ching Mei Liew, Han Shin Lim, Hock Hin Lim, Joanne Siok Mei Lim, Juleen Lim, Sze Kiat Lim, Clement Chien Fung Lo, Siew Kwaon Lui, Daniel Yao-Wie Luo, Jessica Mai-Tran Luong, Mark Simon Lycett, Ellen Hui Ma, Andres John Magness, Sina Mahjoob, Daisy Kwan Hang Mak,

Gabriel Wing Hei Mak, Dev Markan, Daniel Mark Marrow, Deborah Leanne Martin, Brent Dean May, Caroline Louise McFarlane, Simon Christopher McLaughlin, Michael Christopher McNamara, Camille Michener, Alexandra Julia Miglic, Cameron James Morgan, Al Motavalli, Sophia Mougos, Benjamin Namdarian, Lloyd Christopher Nash, Deepa Natarajan, Ashutosh Nath, Marija Nedeljkovic, Anita Lui Pei Ng, Si Yuan Ng, Ba-Thinh Nguyen, MaiAnh Hoang Nguyen, Nguyen Minh Ha, Horng Lii Oh, Prashanth Pawar, Su Ba Thai Pham, Diana Phan, Konstantinos Profitis, Alicia Quach, Umber Rind, Susan Jade Robertson, Karen Louise Robins-Browne, John Roy, Sophia Grace Samuel, Anthony David Sherz, Kasmintan Alexandr Shrader, Naomi Joy Shay, Peter Redmond Shea, Jimmy Zhen Long Shen, Himal Singh, Shankar Sivayoganathan, Jaclyn Cheng Lee Soo, Subash Srikantha, Yulia Sugeng, Chun Hai Tan, Lee Lee Tan, Soon Kim Tan, Stephanie Soo Hwei Tan, Vern-Li Tan, Tay Chee Wan, Benjamin Wen Yeow Teh, Lee-Mong Teh, Rayson Teh, Benjamin Chacko Thomas, Robin Helene Thurman, Henry To, Chek Heng Tog, Alan Swan Ho Tse, Paul Cameron Urquhart, Mila Volchek, Van Thi-Thanh Vu, Ying Being Wang, James Michael Ward, Rae Ella Watson-Jones, Owen Matthew Williams, Philippa Susan Wilson, Hui Yi Ernest Wong, Jaclyn Jin Su Wong, Michael Chun-Gee Wong, Rebecca Wong Mun Wei, Wei Lyn Wong, Jonan Chung Yan Woo, Rebecca Yap, Tiffany I-Chern Yap, Zeng Zeng Yap, Yen Ting Sabrina Yee, Ying-Ruey Yong, Monique Youl, Anita Sin Mun Yuen, James Jin Sup Yun

### **Bachelor of Medical Science (1967)**

John Daniel Hart

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

Ju Pin Ang, Laurel Naomi Bennett, Piers Alexander Blombery, Jun Keat Chan, Lisa Wing-Kwun Chang, Melanie So Lin Cheng, Ada Sau-Zhuen Cheung, Adrian Chiow Kah Heng, Chilton Yoon Loong Chong, Ke Vin Chow, Alexander Angus Cottle, Gabriel Dabscheck, Anne Christine Dawson, Naja Di Pilla, James Sholto Douglas, Andris Harald Ellims, Talia Maree Follett, Annie Rose Fonda, Nova Susanne Hepburn Gibson,

Michael Peter Gilbertson, Chatar Sal Goyal, Katrina Boehnke Guerin, Liam Michael Hannan, Madeleine Louise Healy, Stephen Chu-Sung Hu, James Gian-Chi Huang, Alexander Incani, Sarah Alexandra Kamel, Kenneth Siu Kei Law, Chee Teik Lee, Caitlin Pui Ling Lim, Rachael Lloyd, Michelle Seok Kwan Loh, Kathleen Mary McCloskey, Naseem Mirbagheri, Meena Mittal, Arthur Nasis, Jennifer Margaret Neil, Quynh-Nhu Thieu Nguyen, Paul Martin Paddle, Gaurie Palnitkar, David Andrew Pattison, Timothy John Pianta, Anthony Philip Rode, Laina Michelle Sheers, Gemma Elizabeth Strickland, Poh Seng Tan, Tse-Chieh Teh, Philip Alastair Thompson, Jane Victoria Watts

### COMBINED DEGREES

### **Bachelor of Arts and Bachelor of Medicine and Bachelor of Surgery**

Rebecca Wai Ping Chan, Harvey Hsin-Fu Lee, Andrew John Marriott, Dominique Elizabeth Martin, Ong En Ye

### **Bachelor of Arts and Bachelor of Medicine and Bachelor of Surgery with Honours**

Adam Zacharia Pastor

### **Bachelor of Medicine and Bachelor of Surgery and Bachelor of Medical Science**

Synn Lynn Chin, Margaret Mei Ling Doery, Sarah Elizabeth Kofoed, Ek Meng Liew, Felicia Soon Giak Ng, Warren Matthew Rozen, Wee-Kheng Soo, Owen Murray Stock, Simon Sung, Monika Tasani

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

Shalini Ambika Amukotuwa, Danielle Freeman, Philip John Ryan, Tomos Evan Rhys Walters

### **Bachelor of Arts and Bachelor of Medicine and Bachelor of Surgery and Bachelor of Medical Science**

Stefan Charles Bartholemew Kane

### **Bachelor of Arts and Bachelor of Medicine and Bachelor of Surgery with Honours and Bachelor of Medical Science**

Daniel Richard Lenaghan, Isaac Raymond Marshall

## MASTERS DEGREES

**Master of Clinical Audiology (2000)**

Allison Maree Baker, Loretta Lee Brown, Warren Andrew D'Costa, Irene Douras, Lori Friedman, Miranda Hadjiconstanti, Amani Mounir Hanna, Judith Christine Harper, Olivia Jane Hillenaar, Robyn Elaine Horner, Luke Andrejs Klunder, Hanny Listyowati, Jasmine Siu Chun Mar, David Andrew McAdam, Justine Suzanne Nedinis, Irma Saldic, Andrea Elizabeth Thomas, Elizabeth Jane Webster

**Master of Epidemiology (2003)**

Dianne Joyce Beck, John Anthony Burgess, Katharine Sophia Cantwell, Ashley Scott Richard Fletcher, Katherine Leslie, Francis Christopher Parker, Marinis Pirpiris, Tanya Denise Wilson, Nyima Yoezer

**Master of Health Sciences (2000)**

*Genetic Counselling*  
Lisette Jane Curnow

**Master of Medical Anthropology (2002)**

Philomena Anne Horsley, Duncan Adam Howard

**Master of Medicine (1983)**

Andrew Martin McAllan

*Clinical Neurosciences*  
Arun Kumar

*Paediatrics*  
Harriet Hiscock

*Physiotherapy*  
Graham Kenneth Wong

*Psychiatry*  
Joel Aizenstros, Bension Elijah, Brendan John Hyland, Spiri Katsenos, William James Leahey, Trong Hieu Pham

**Master of Psychiatry (1995)**

George Anasson, David John Como Bettany, Michelle Anne Boldt, Veronique Namur Irene Browne, Scott Graham Chambers, Gaurav Atma Deva, Cecelia Ines Etulain, Beate Kate Harrison, Halimah Hassan, Julian Thorkild Hughes, Mark Andrew Jeanes, Marie Lucia Leonard, On Lien, Salvatore Donato Martino, Ramon Mocellin, Tung Ngoc Thanh Nguyen, Vanda Pokos, Ajeet Bhagat Singh, Marta Krisztina Tibad, Anne Katrine Ward

**Master of Public Health (1999)**

Rauchan Akhter, Meredith Gwendoline Atkinson, James Bvirakare, Jessica Malini Chellappah, Themba Thomas Geoffrey Ginindza, Jesus Encena Jr, Emma Muthoni Karatai, Yi Hui Li, Badri Prasad Panta, Tecle Team, Victoria Team, Thi Thu Ha Tran, Chembie Villalobos, Judith Heather Wilson, Yin Zhou

*Epidemiology and Biostatistics*  
Cuong Quoc Nguyen, Penelope Katherine Tresise

*Health Program Evaluation and Health Economics*  
Louise Heuzenroeder, Tricia McDonald

**Master of Surgery (1995)**

Ahmad Aly

**Master of Women's Health (1996)**

Aurora Frattali, Josephine Mmanchibidu Nkosana, Jan Louise Wiebe, Attiqah Latif Zaigham

**Master of General Practice Psychiatry (2003)**

Peter Graham Morris, Frances Anne Poliniak

**Master of Health Promotion (2003)**

Eder Saul

**Master of Medical Anthropology (2003)**

Philomena Anne Horsley, Duncan Adams Howard, Siti Sulistyawati

## DOCTORATES

**Doctor of Medicine (1862)**

James Ewen Kirkwood Galbraith, Wen Kwang Lim, Trevor Leong, Michael Andrew Murphy, Chee Ming Vun

*Psychiatry*  
Patrick Dennistoun McGorry

**Doctor of Philosophy (1948)**

*Anatomy and Cell Biology*  
Ik Tsen Julian Heng, Marisa Montanaro, Alexandra Elizabeth Rehn, Helen Valcanis

*Biochemistry and Molecular Biology*  
Min Hu, Karen Louise Laurie, Junjun Liu, Tomris Mustafa, John Henry Patterson, Megan Ann Polidano, Anne Primrose Wijayanthi Wijayaratham, Jody Louise Zawadzki

*Medical Biology*  
Eva Bucsu, Denise Victoria Ruby Bullen, Helmut Butzkueven, Ann Leckie Cornish, Kirsten Louise Puls, Brent Steven McKenzie, Justine Denise Mintern, James Andrew Pearce, Pratyaksha Wirapati

*Medicine*  
John Stephen Archer, Susanne Christina Feil, Georgia Giannakis, Vicki Levidiotis, Rodney Brian Luwor, Marie Luisa Macheola, Mark William Parsons, Brietta Louise Pike, Michelle Julie Porritt, Prashanthan Sanders, Velardai Srikanth, Jonathan William Sturm, Jacinda Stork, Margarite Julia Vale, Christopher John Worsnop, Wenlai Zhou

*Medicine and Chemistry*  
William Issa

*Microbiology and Immunology*  
Hatsadee Appassakij, Davina Louise Dudley-Moore, Nadine Lee Dudek, Janet Wee Lye Keng, Joanna Louise Miller, Larissa Nicholls, Paul McGregor Taylor, Nicole Louise Webster

*Paediatrics*  
Ayan Dasvarma, Sharon Ruth Goldfeld, Michalle Kalari Howie, Natalie Carmaline Jones, Christine Angelika Olesch, Marinis Pirpiris, Priscilla Mary Robinson, Colin Alistair Sherrington, Susan Rachel Skinner

*Pathology*  
Victoria Beshay, Steve Binos, Toula Bouras, Ian James Frew, Nicole Margaret Haynes, Brooke Dominique Lazarus, Elena Nicole Provenzano, Erica Kate Sloan, Margaret Jean Smith, James Maitland Thyer

*Pharmacology*  
Mark Graeme Devlin, Joohyung Lee, Anke Claudia Rosenkranz

*Physiology*  
Sally Ann Mifsud

*Psychiatry*  
Elizabeth Margaret Celi

*Psychiatry and Education Policy and Management*  
Helen Christine Vidler

*Public Health*  
Cally Berryman, Jamileh Abu-Duhou, Catherine Francis, Elizabeth Anne Hoban, Vaughan Lester Koops, Celia Elizabeth McMichael, Sari Andagani Sutjahjo, Danielle Susan White, Sarah Diana Howard Wilde

*Surgery*  
Damien Bates, Giovanna Marisa D'Abaco, Cuong Phu Do, Anthony Zulli

**Doctor of Public Health (2003)**

Maturot Chalamat

## DIPLOMAS

**Graduate Diploma in Audiological Science**

Ruth May Ault, Cheng-Chung Chen, Juliet Sien Ai Chin-Lenn, Susan Amanda Collie, Stephanie Louise Eaves, Angela Mary Fanning, Jade Fay Frederiksen, Alicia Edwina Hull, Elizabeth Joann Ignasiak, Aaron Xavier Jacobs, Carina Elizabeth Kar-Wai Law, Kim Fuen Lie, Rachael Jane Parker, Stacey Lynn Rich, Davina Louise Ross, Claire Elise Rundell,

Raymond Taylor, Susan Tegg, Melanie Beth van der Schoot, Rebecca Jade Welgus, Cathryn Mary Williams, Yin Hun Wong, Rebecca Jean Wood

#### **Graduate Diploma in Adolescent Health and Welfare**

Jacinta Ann Battersby, Frances Burns, Lucinda Mary Faith Catford, Ciara Anne Chaomhanach, Patricia Mary Cheary, Lucinda Margaret Cook, Rae Marie Cook, Marisa Jane Dann, Pamela Davies, Timothy Selwyn Forster, Anne-Marie Hyde, Jacqueline Anne Laaksonen, Sara Longwood, Sally Ann Malone, Christina Maree Maloney, Joanne May McLean, Gillian Lyn Merzvinkis, Susan Moreira, Khairani Omar, Peggy Phaik Kiew Page, Lisa Therese Pollard, Ian Michael Poyser, John William Pye, Alison Joy Ramadge, Breige Ann Rendell, Rosetta Salvo, Angelika Schiller-Von Sanden, Michael Anthony Shone, Paul William Snell, Jan Taylor, Shelley Jane Taylor, Melissa Anne Thompson, Sarah Louise Walker, Megan Lisa Yates

#### **Graduate Diploma in Drug Evaluation and Pharmaceutical Sciences**

Aneta Teresa Dowsing, Marie Jacqueline Bernadette Jean-Francois, Rachel Kathryn Mansfield, Michael David Tavaría

#### **Graduate Diploma in Epidemiology and Biostatistics**

Nasra Ahmed, Alison Elise Campbell, Fiona Jane Cunningham,

Andrew John Davidson, James Edward Fielding, Susan Gallagher, Joy Elizabeth Gregory, Lindy Marie Johnson, Tessa Germaine Keegel, Genevieve May Josephine A Klug, Georgina Michelle Marr, Sacha McKenzie, Steven James McTaggart, Evelyne Elvira Muggli, Shula Perelstein, Sophie Louise Rogers, Ronald Frank Slamowicz, Paul Daniel Smith, Ronald Victor Sultana, Deidre Toia, Nicola Therese Weinman

#### **Graduate Diploma in Genetic Counselling**

Kathryn Alice Arkell, Janice Edyth Armstrong-Conn, Jacinda Simone Asbury, Judith Jane Bailey, Gillian Marie Caldwell, Emily Margret Geraghty, Claire Laura Hammond, Sharon Marie Lewis, Penelope Joy Pitt, Georgia Stamaratis, Allison Mary Thomas, Marc Alexander Tillotson

#### **Graduate Diploma in Medical Anthropology**

Jenny Rose Advocat

#### **Graduate Diploma in Mental Health Sciences**

*Child, Adolescent and Family Mental Health*  
Abanoub Attalla, Christine Mary Denton, Kerry Lyn Holland, Paul Leeves, Karen Marie McGraw

#### *Clinical Hypnosis*

Christopher Francis Morgan

#### *Cognitive Behavioural Therapy*

Nicole Lee Davis

#### *Community Mental Health*

Stephen John Baker, Janine Chugg, Anne-Marie Dickson, Eileen Joy Gibbs, Anthony Charles Newton, Stephen John Reinmuth, Maurice John Ryan, Eddy Hock Seang Tan, Nicholas Teo, Irene Suk-Yee Watkins, Jennifer Lynne Wilkinson

#### *Infant and Parent Mental Health*

Rachelle Irene Isaac, Kylie Louise Matusewicz, Fiona Brigid McGlade, Ingrid Erika Meyer, Wendy Susan Morgan, Karen Lee-Ann Potter, Teresa Josephine Russo, Susan Jane Wilson

#### *Young People's Mental Health*

Sarah Elizabeth Bowden, Caroline Coyle, Paula Louise Crick, Jonathan David Farr, Lara Melinda Geach, Donna Maree Hodgson, Yvonne Catharine McAviney, Derek John Moore, Steve James Penno, Mary Philomena Ranke

#### **Graduate Diploma in Women's Health**

Samia Baho, Caterina Bortolot, Sharon Cassar, Lisa Catherine Hanger, Joanne Marie Kirk, Keiko Ohtsuki, Yoshi Takenaka, Fumiko Togasato

#### **Postgraduate Diploma in Palliative Medicine**

Susan Margaret Armstrong, Rebecca Jeanne Chapman, Sonia Louise Fullerton, Jane Alice Maree Keech, David William Saner, Eric Van Opstal, Shane Christopher White, Marla Winifred Williams

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## School of Medicine MB BS Final Year Undergraduate Prizes and Awards 2003

*Alfred Edward Rowden White Prize in Clinical Obstetrics*  
Alexander Incani

*AOA (Vic) Orthopaedic Prize*  
Naseem Mirbagheri

*Australian Medical Association Prize*  
Andris Ellims

*Beaney Scholarship in Surgery*  
Naseem Mirbagheri  
Paul Paddle

*Clara Myers Prize in Surgical Paediatrics*  
Naseem Mirbagheri

*EH Embley Prize in Anaesthetics*  
Liam Hannan

*Howard E Williams Prize in Paediatrics*  
Michael Gilbertson

*Jamieson Prize in Clinical Medicine*  
Alexander Incani

*John Cade Memorial Medal in Clinical Psychiatry*  
Andris Ellims

*Keith Levi Memorial Scholarship in Medicine*  
Alexander Incani

*The Pharmacia Award in Clinical Pharmacology and Therapeutics*  
Alexander Incani

*Prize in Clinical Gynaecology*  
James Douglas

*Proxime Accessit Prize in Surgery*  
Kylie Bruce

*RACGP Prize in Community Medicine*  
Andris Ellims

*Robert Gartly Healy Prize in Medicine*  
Alexander Incani

*Robert Gartly Healy Prize in Obstetrics*  
Naseem Mirbagheri

*Robert Gartly Healy Prize in Surgery*  
Naseem Mirbagheri  
Paul Paddle

*Rowden White Prize*  
Andris Ellims  
Alexander Incani

*Sir Albert Coates Prize in Infectious Diseases*  
Katrina Guerin

## Dean's Honours List 2003

**Semesters One and Two**

Naomi Clarke  
Teresa Cosgriff  
Marissa Ferguson  
Sarah Good  
Jodi Halford  
Khai Lin Huang  
Georgina Lyons  
Sarah McDonald  
Dilraj Singh  
Verity Sutton  
Jessie Teng  
Charmaine Teo

Mervyn Kyi  
Andrew Macleod  
Sarah Mansfield  
Elissa McNamara  
Allison Bwun-Yee Mo  
Hao-Wen Sim  
Christine Wools  
Bo Zu

**Semester Five**

Shimin Chung  
Robert Commons  
Marissa Daniels  
Eric Soon Yi Ee  
Nina Fisher  
Jo-Anne Manski-Nankervis  
Li-Sen Sandra Neoh

Anne Trinh  
Bernadette White

**Semesters Six and Seven**

Dean's honours are not awarded for these semesters.

**Semesters Eight and Nine**

Adam Cichowitz  
Penelope Cotton  
Lisa Dimitrakakis  
Harriet Gee  
Katharine Hogg  
Katherine Howell  
Angus Husband  
Siobhan Mullane  
Frank Chun Hay Ng

Shereen Oon  
Deniz Yaka

**Final Year**

Shalini Amukotuwa  
Ada Sau-Zhuen Cheung  
James Douglas  
Andris Ellims  
Talia Follett  
Alexander Incani  
Naseem Mirbagheri  
Meena Mittal  
Paul Paddle  
Timothy Pianta  
Gemma Strickland  
Philip Thompson  
Jane Watts

## UMMS ADVANCED MEDICAL SCIENCE PRIZE 2003

The UMMS Advanced Medical Science Prize is supported by donations from UMMS members. Two prizes of \$500 each are awarded each year. Prizes for 2003 have been awarded to Meredith Stone and to Chi Li.

**Actors within the system: psychiatrists and public mental health research in Asia**

BY MEREDITH STONE

**T**HIS STUDY EMPLOYS a public health approach in investigating the characteristics of different mental health systems in Asia from the perspective of prominent Asian psychiatrists. It explores some of the ways in which changing social and cultural environments have influenced the character of mental health problems and the nature of mental health services throughout Asia. At the same time, it considers how such structural elements can be transformed by key individuals working within the health system.

Sixteen psychiatrists from around Asia (Cambodia, China, Hong Kong, Indonesia, Japan, Korea, Malaysia, Philippines, Singapore, Taiwan and Thailand) were interviewed using a semi-structured interview format. They were asked to discuss salient issues related to three broad topics:

- Perceptions about mental health needs in their home countries
- The perceived effectiveness of current mental health services and systems
- Opinions about how these systems should be changed, with particular reference to the potential leadership and advocacy roles of key individuals

The findings in this study point to the importance of the socio-political context of mental well-being. They contribute to an expanding body of literature documenting the detrimental impact of rapid socio-cultural changes on population mental health in Asia. This study also indicates that such changes have influenced the provision of mental health services and proposes this as a reason why recent calls for increased community-based mental health care have not always been translated into practice. The project supports contemporary public health theory calling for psychiatrists to broaden the scope of their professional interests in order to take account of the prominence of non-clinical influences on mental health. However, it suggests that this will only be possible if

support networks are in place to provide encouragement to mental health professionals in pursuing their multiple and changing roles.

**Cytotoxic T Lymphocyte Effector Pathways in Type I Diabetes**

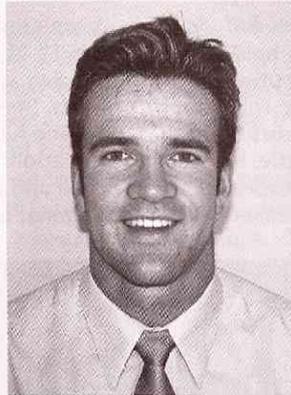
BY CHI LI

**T**YPE I DIABETES occurs when pancreatic  $\beta$  cells are destroyed and unable to produce insulin to maintain blood glucose homeostasis. Over the last decade, a wealth of data from *in vitro* systems and work with gene-modified mice have implicated three main effector pathways in  $\beta$  cell destruction, mediated by perforin/granzymes, Fas/FasL and TNF $\alpha$ /TNFR1. However, the relative roles played by these pathways, and the intramolecular mechanisms they utilise to induce apoptotic events, remain unclear. The aim of this project was therefore to explore the contribution of these pathways in the killing of NIT-1, a  $\beta$  cell line derived from the NOD/Lt mouse, by allogeneic CTLs raised in wild type and gene-deficient mice. Perforin and granzyme B was found to be essential for the acute induction of apoptosis. In the absence of perforin, however, TNF $\alpha$  was able to induce less efficient pathways to cause delayed killing. Intriguingly, when the TNF $\alpha$ -mediated pathways were blocked, CTLs were still able to induce delayed killing via perforin-dependent but granzymes A and B-'cluster'-independent means. From these results, it was clear that granzyme B/perforin was the most efficient killing mechanism. However, Bcl-2 overexpression did not protect NIT-1 cells from cytotoxicity induced by recombinant granzyme B in concert with pneumolysin (which duplicates perforin function). These conclusions suggest that  $\beta$  cells may use different cellular mechanisms to achieve apoptosis compared to haematopoietic cells. Together, these experiments support the concept of tissue-specific sensitivity to various apoptotic mechanisms, which is balanced by the arsenal of killing pathways available to effector T cells.

## FINAL YEAR TOP STUDENT 2003

## Andris Ellims

In 2003, Andris Ellims achieved the highest honour in the undergraduate medical course by topping the course aggregate. This was the culmination of six years of high achievement for Andris, who was regularly listed on the Dean's Honours List. These stellar achievements are found in a young man who is both engaging and warm—ideal characteristics for a doctor!



ANDRIS ELLIMS

Andris completed his clinical years at the Royal Melbourne Hospital/Western Hospital clinical school where he worked quietly and diligently. He was born in Washington and moved to Australia when he was only nine months old. Andris is interested in music and sport, particularly football, which is his passion—both playing and watching. He follows the Geelong Football Club and played, until recently, with the Old Melburnians. Andris is enjoying his intern year and sees his future as a physician, possibly a cardiologist.

University of Melbourne  
Medical Society

(UMMS) MEMBERSHIP

The University of Melbourne Medical Society was founded in 1982 to promote communication between graduates and the School of Medicine. UMMS also promotes excellence in medical education and research, and raises funds to support initiatives within the school. It provides a means for medical graduates to stay in touch with former classmates and opportunities for active links with the School of Medicine and the university. Members are kept informed about the medical school and fellow graduates through *Chiron* and *Melbourne PostCard*, and receive advance invitations to: the Dean's Lecture Series; the ethics seminar; the society's annual lecture and function; and reunions of their graduate year.

## MEDICAL GRADUATE REUNION ASSISTANCE

The University of Melbourne Medical Society office can assist with reunions. We can: list reunion details in *Chiron* and in *Melbourne PostCard*; obtain on your behalf a list of graduates from your year group plus mailing labels and advise on possible university venues for your reunion. Contact the UMMS office for details.

Contact details for the UMMS office are on p48 of this issue of *Chiron*.

## 2004 REUNIONS

63<sup>rd</sup> year of 1941

24 September 2004  
University House  
James Guest  
(+61 3) 9347 3852 (ah)

62<sup>nd</sup> year of 1942

6 June 2004  
Royal South Yarra  
Tennis Club  
John Tucker  
(+61 3) 9827 2713

60<sup>th</sup> year of 1944

25 March 2004  
Lyceum Club  
Hal Hosking  
(+61 3) 9846 1523 (ah)

55<sup>th</sup> year of 1949

3 November 2004  
Kooyong Lawn Tennis Club  
Noel Cass  
(+61 3) 5974 1489 (ah)  
noelcass@melbpc.org.au

50<sup>th</sup> year of 1954

6 November 2004  
Royal South Yarra Club  
Norman Beischer  
(+61 3) 9419 8485 (bh)

45<sup>th</sup> year of 1959

13 November 2004  
Hilton Hotel  
Clive Bennetts  
(+61 3) 9783 2445 (bh)  
bennetts@supportnet.com.au

40<sup>th</sup> year of 1964

18 December 2004  
University House  
Stewart Mair  
0418 491 849  
stewart@mair.com

35<sup>th</sup> year of 1969

13 November 2004  
Queens Hall,  
Parliament Building  
Kevin Moriarty  
(+61 3) 9416 1584 (bh)  
(+61 3) 9816 9066 (ah)

30<sup>th</sup> year of 1974

mid November – tbc  
David Tuxen  
(+61 3) 9276 3050 (bh)  
tux@uunet.com.au

25<sup>th</sup> year of 1979

21 August 2004  
Royce Hotel  
Lorraine Baker  
(+61 3) 9857 7016 (bh)  
(+61 3) 9804 3749 (ah)

20<sup>th</sup> year of 1984

mid November – tbc  
Neal Finegan  
nfinegan@bigpond.net.au

## 2005 REUNIONS

60<sup>th</sup> year of 1945

1 April 2005  
Donald Cordner  
(+61 3) 5258 2373 (ah)

MB BS GRADUATE  
ANNIVERSARIES 2004

5<sup>th</sup> year of '99  
10<sup>th</sup> year of '94  
15<sup>th</sup> year of '89  
20<sup>th</sup> year of '84  
25<sup>th</sup> year of '79  
30<sup>th</sup> year of '74  
35<sup>th</sup> year of '69  
40<sup>th</sup> year of '64  
45<sup>th</sup> year of '59  
50<sup>th</sup> year of '54  
55<sup>th</sup> year of '49  
60<sup>th</sup> year of '44

## Organising a Reunion Dinner?

University House on the campus of the University of Melbourne is the ideal venue for groups ranging in size from 30 to 250 guests.

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

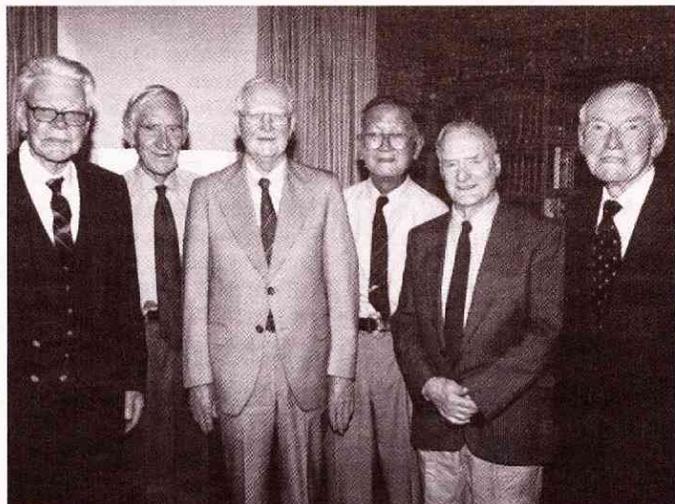
Please contact Erin Douglass on (61 3) 8344 5254 for further information or visit the website at [www.unihouse.org.au](http://www.unihouse.org.au)

# 2003 REUNIONS

## MB BS 1939

### Sixty-Four Years Reunion

*From Colin Laing*—A reunion luncheon celebrating sixty-four years since graduation was held in the library of Graduate House. Time has taken its toll on the 1939 graduates, but seven were able to attend: David Alexander, Alfred Barnett, Maurice Gooley, Gordon Keys Smith, Colin Laing, Blair Widmer. Unfortunately, Andrew Frazer was interstate at the time of the reunion.



## MB BS 1943

### Sixty Years Reunion

*From Bill Swaney*—A reunion lunch for the 1943 graduates was held at Leonda on 12 March 2003. Twenty-two graduates accepted the invitation and with accompanying spouses there were thirty-four for lunch. Stevens Dimant, who joined us from Cambridge in third year and has been practising neurosurgery in Seattle, USA, since graduation, was guest speaker and told us of his experiences in Oxford and America. The next reunion will be organised by Dulcie Rayment and Margot Sussex.



MB BS 1943

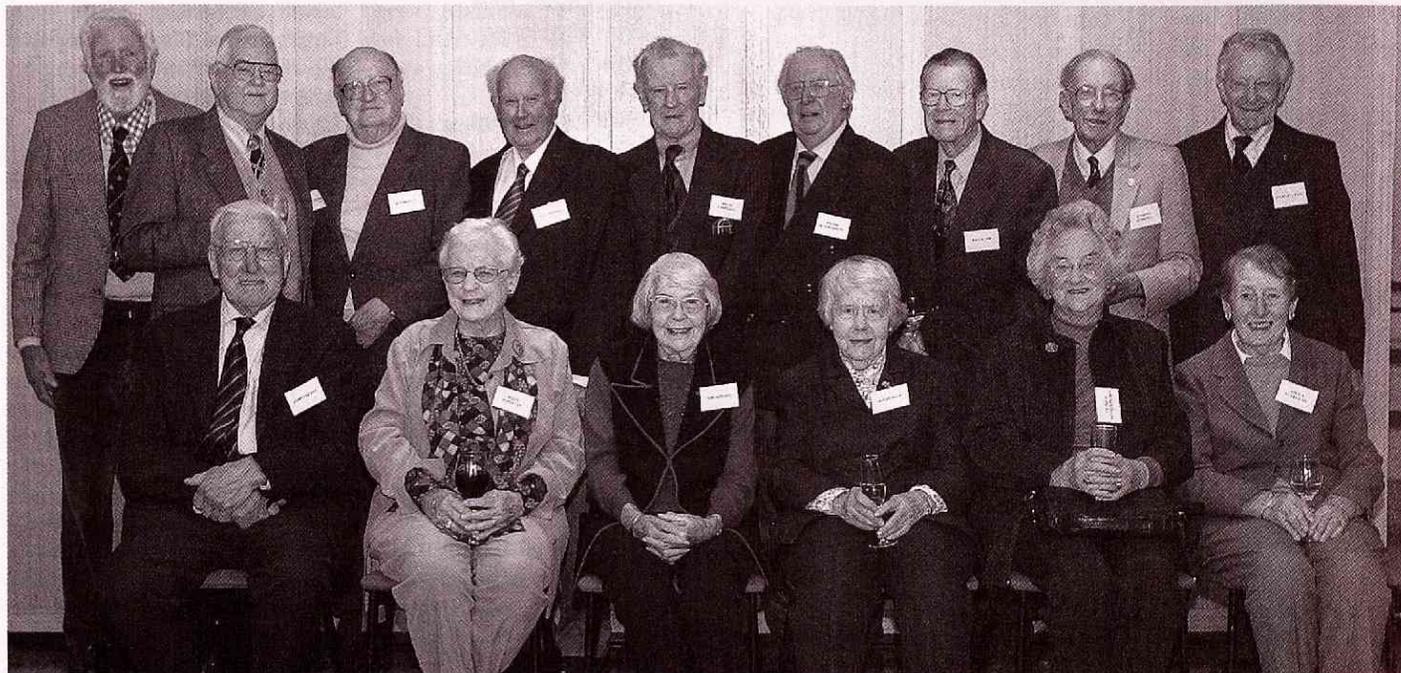
## MB BS 1941

### Sixty-Two Years Reunion

*From James Guest*—On 19 September 2003 fifteen of the 101 medical graduates of 1941 sat down to lunch at University House. It was a happy occasion and the feeling was that we were grateful to be there. Our faces have changed but are as familiar as ever, even though most of us see each other only once a year. A collection of photographs brought back old memories, and the conversation was cheerful and optimistic.

As our numbers diminish we seem to be pulled closer together. Those present were: Michael Benson, Doug Atkinson, David Pitt, Peter Bird, Brian Costello, Frank de Crespigny, Bill Sloss, Stewart Moroney, John Billings, James Guest, Mary Wheeler, Ida Seward, Alexa Gale, Clarice Hetherington and Sheila Cleghan.

We now meet every year.



## MB BS 1953

### Fifty Years Reunion

*From Ian Martin*—The fiftieth anniversary of the medical graduates of 1953 was commemorated with a dinner at the Kooyong Tennis Club on 14 November 2003. Sixty-two graduates and their partners attended. Those able to attend came from the USA and England, interstate and country Victoria.

The evening was a great success with an informal atmosphere, one toast to absent friends, and the opportunity to catch up with colleagues in pleasant surroundings. The

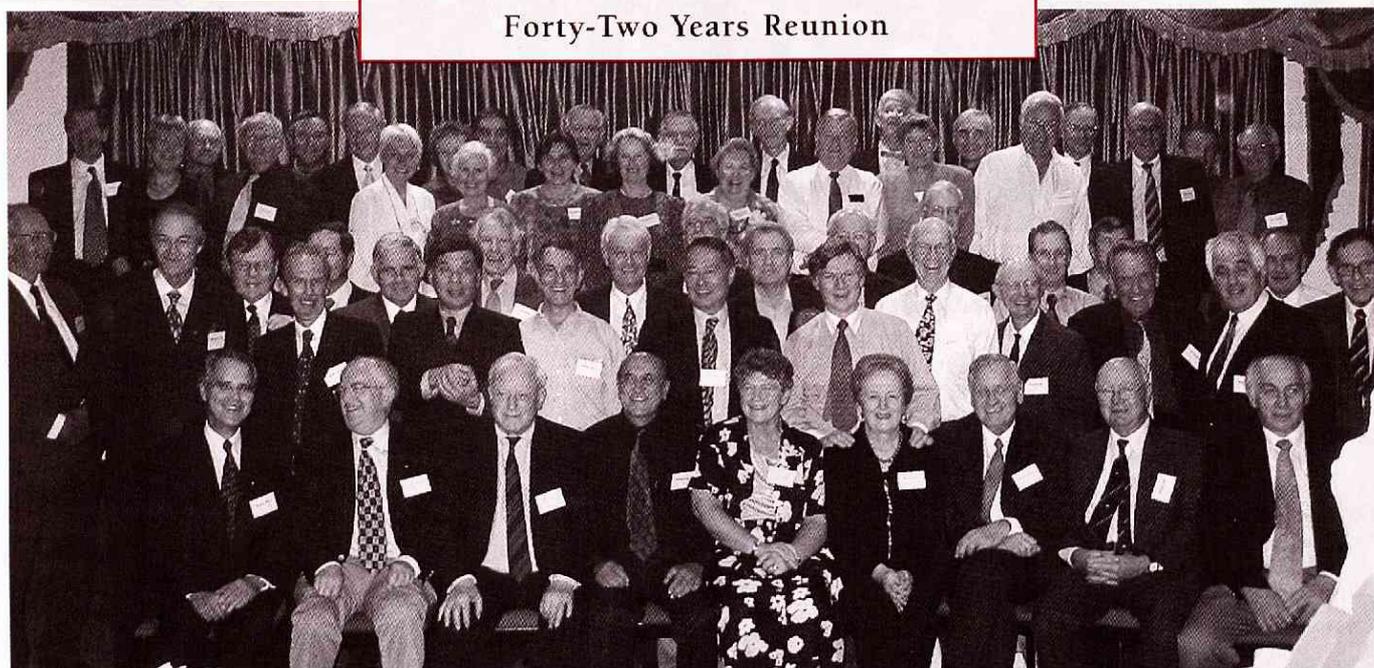
diversity of careers was well illustrated by Vernon Bailey who, after spending his professional life as a nutrition advisor for WHO in Africa and Asia, is now a part-time park ranger in Canberra. Many others had developed new interests after retirement, but a survey found that almost half of those contacted were still working in medicine, at least part-time.

The tradition of gathering next day in the Royal Botanical Gardens was continued although a thirty-nine degree day and a north wind affected the numbers attending.



## MB BS 1961

### Forty-Two Years Reunion



The graduates of 1961 and their partners met for a long overdue 'forty years' reunion on 14 March 2003. Graduates attending were: Eve Addis (Yuer), Kristina Bredikis (Whan), Roger Brown, Stuart Brumley, Louise Buckle, Roger Buckle, David Buntine, John Burgess, Barry Butler, Robert Carey, KC Chee, John Chew, Tony Coates, Rosalie Cooper (Alexander), Joan Corrie, Bill Crombie, Anne D'Arcy, Graeme Dennerstein, Malcolm Douglas, Rene Dupuche, Roy Fink, Arthur Franks, Warwick Greville, Walter Heale, Max Holsman, Robin Hooper, Robert Hope, Graeme Hudson, Alan Isaacs, David Johnson, Clive Jones, Bob King, Maurice Korman, Leon Lewi, Jeffrey Long, Alex Lopata, Valerie Mayne, Peter McCullagh, Ian McKenzie, Clive Morris, Ken Mountain, Bill Newell, Ron Parker, John Paull, David Phillips, William Renton-Power, Jonathan Rush, Terry Rush (Vice), Graeme Ryan, Daryl Salmon, Chris Schokman, Colin Seabridge, Bhagat Singh, John Smyth, David Sowden, Jim Stockigt, Ing Kiet Ting, Jack Warhaft, Fiona Weir, Brian Woodward and Rena Zimmet. A forty-five years reunion is planned for 2006.

## MB BS 1973

### Thirty Years Reunion

*From Hamish Ewing*—On 22 November 2003 the 'year of 1973' gathered to celebrate thirty years of medicine. Proceedings opened in the Sunderland Lecture Theatre in a somewhat reflective mood. Presenters who had taken different paths in medicine and life shared their diverse and rich experiences with the group after Les Bolitho had set the scene with images of the seventies through to the responsibilities of 'old age'. Jamie McKew showed it is possible to run a major event, the Port Fairy Folk Festival, as well as being a Geelong GP. Rod Anderson shared his rich life story, which included working in rural Papua New Guinea, running for parliament on a peace ticket, hospital administration and forest campaign director for Environment Victoria. Steve Baddeley did his internship in Darwin and 'stayed on' after Tracy to become an orthopaedic surgeon in the Northern Territory with working

trips to underprivileged Indonesia and many holiday adventures world-wide! Hamish Ewing spoke of recent surgical trips to Dili, East Timor. Issy Schweitzer showed us the new way forward—a university psychiatry department within a private hospital—and Norm Eizenberg challenged us with a thought provoking presentation on the new curriculum.

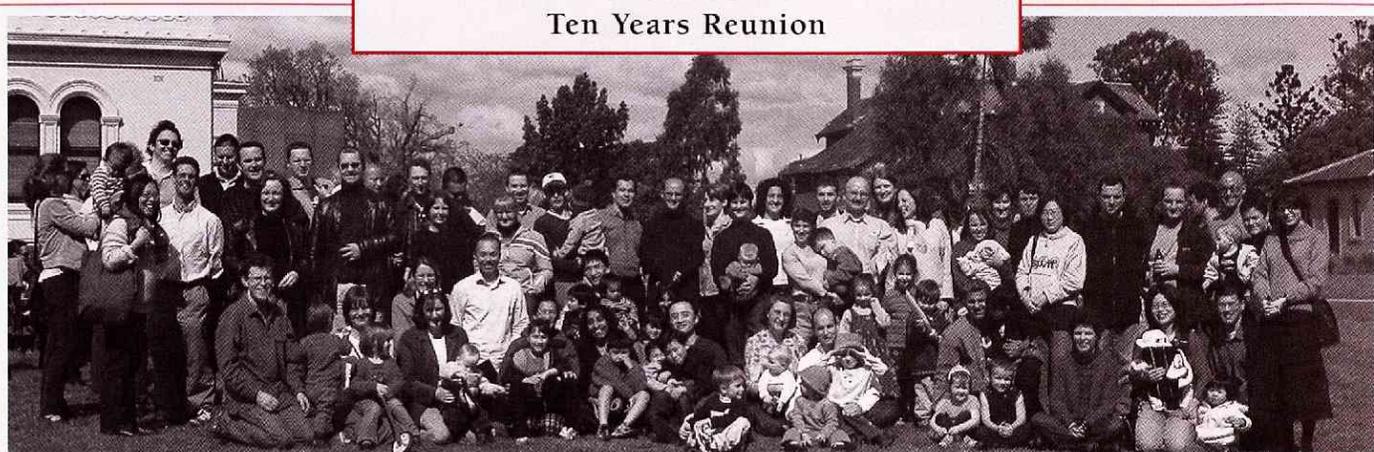
The morning was followed by a light lunch in the university union. Later, we enjoyed a grand evening in Queen's Hall, Parliament House where, after a welcoming drink, we gathered in front of 'admiring' city crowds for a group photo on the steps—116 graduates of 1973. Good food, dancing to Brian Fitzgerald and much talk was the order of the night, all under the imperious gaze of Queen Victoria who, stood atop her pedestal.

Our in-house artist, John Mullett, found a photocopier to print the splendid Speculum Award that he had crafted during the night. See you in 2008!



## MB BS 1993

### Ten Years Reunion



THE GRADUATES OF 1993 CELEBRATED TEN YEARS SINCE GRADUATION IN THE ROYAL BOTANIC GARDENS, MELBOURNE ON 26 OCTOBER 2003. THE CASUAL FORMAT FOR THE DAY WAS VERY SUCCESSFUL. THE WEATHER HELD OUT AND MUCH CATCHING UP WAS DONE. THANKS TO ALL WHO CAME AND WE LOOK FORWARD TO SEEING YOU NEXT TIME IF YOU DIDN'T MANAGE TO MAKE IT ON THE DAY.

## MB BS 1978

### Twenty-Five Years Reunion

From Simon Woods—The function for 104 was held at the Melbourne Zoo with pre-dinner drinks at the new Trail of the Elephants pagoda, followed by dinner at the carousel marquees. Greg Mewett, resplendent in a kilt, was a fantastic master of ceremonies. A selection of music from the seventies was drowned out by conversation as people caught up with each other—some having not met for twenty-five years.



JOHN KIFFER (L) AND GREG MEWETT

#### THE UNIVERSITY OF MELBOURNE MEDICAL SOCIETY CONGRATULATES...

*Dr James King (MB BS 1995) and Dr Andrew Morokoff (MB BS 1994) who were awarded first and second prizes respectively in the Young Investigators Awards at the Surgical Research Society of Australasia.*

*Professor Lester Peters (Peter MacCallum Cancer Centre and Royal Melbourne Hospital) who was awarded the gold medal of the American Society for Therapeutic Radiology and Oncology for excellence in research and for his many contributions to improvements in the standard of practice in radiation oncology.*

*Professor Neville Yeomans (MB BS 1965, Department of Medicine, Royal Melbourne Hospital/Western Hospital) who was awarded the John Sands Medal from the Royal Australian College of Physicians for his outstanding service to the college, particularly his contributions to continuing education.*

*Associate Professor Christopher Briggs, Ms Priscilla Barker, Dr Ivica Grkovic and Dr Norm Eizenberg (Department of Anatomy and Cell Biology) who won the Best General Multimedia category at the annual Australian Teachers of Media awards for their educational CD-Rom *An@tomedia: Thorax*.*

#### Companions of the Order of Australia (AC)

*Laureate Professor Graeme Milbourne Clark (Foundation Chair, Department of Otolaryngology, Director, Bionic Ear Institute) – for service to medicine and to science through innovative research to further the development of cochlear implant technology for worldwide benefit. Graeme Clark has also been made an honorary fellow of the Royal Society of Medicine, London.*

*Emeritus Professor Jacques Francis Miller AO (WEHI) – for service to medical science in the area of immunology research, particularly in relation to seminal contributions to the understanding of the working of the immune system leading to wider research in tissue transplantation, immunological deficiency syndrome and control of cancer.*

#### Officers of the Order of Australia (AO)

*Professor Robert Williamson (Director, Murdoch Childrens Research Institute) – for service as a biomedical research scientist in the field of human genetics, as an educator and administrator, and as a major contributor to the debate on ethical issues related to genetics practice.*

#### Members of the Order of Australia (AM)

*Associate Professor Thomas Michael Adamson (MB BS 1960) – for service to neonatal paediatrics and medical research, particularly through the study of respiratory and sleep disorders, and to the establishment and development of specialist medical and teaching facilities.*

*Professor Robert Charles Atkins (MB BS 1962) – for service to medicine, particularly in the field of nephrology, through research in the area of inflammatory diseases of the kidney and through education and professional organisations.*

*Dr Geoffrey William Harley (MB BS 1954, GDip Ophthal. 1959) – for service to ophthalmology through the establishment of the National Trachoma and Eye Health Program, the Royal Children's Hospital, professional associations and humanitarian support to developing countries.*

*Emeritus Professor Ian Farquhar McKenzie (MB BS 1961, MD 1965, PhD 1971) – for service to medical research through the development of research facilities in Australia, particularly the Austin Research Institute, and in the fields of immunology, cancer diagnosis and therapy, transplantation and xenotransplantation.*

*Professor Roger Valentine Short (Department of Obstetrics and Gynaecology) – for service to science as a reproductive biologist and as a contributor to a range of international groups concerned with fertility and related issues.*

#### Medal of the Order of Australia (OAM)

*Dr Lexia Roma Bryant (MB BS 1972) – for service to medicine, particularly through support for women in rural and remote practice.*

*Professor Geoffrey Wyatt Dahlenburg (MB BS 1957, MD 1981) – for service to medicine as an educator and administrator.*

*Dr Michael Samuel Hirshorn (MB BS 1974) – for service to medical technology through the development of strategies for product commercialisation.*

*Dr Ian Leonard Rowe (MB BS 1947) – for service to medicine, particularly through the Royal Australian College of General Practitioners, and to the community through Rotary International and the Western Hospital.*

*Dr Dianne P Stephens (MB BS 1988) – for service through provision of medical assistance to the victims of the bombings which occurred in Bali on 12 October 2002.*

*Dr William Rowe Twycross (MB BS 1977) – for service to the community of Mansfield.*

#### Public Service Medal

*Dr Peter Sydney Allen (MB BS 1963) – for outstanding public service and contribution to the public health system, particularly at Southern Health.*

*Dr John McEwen (BSc 1965, MSc 1968, MB BS 1976) – for outstanding public service in advocating drug safety through the monitoring and reporting of adverse reactions.*

## Rinesh Bhullar

1979—2003

**T**HE SCHOOL OF Medicine and the University of Melbourne Medical Society mourn the untimely death of fifth year medical student Rinesh Bhullar, on 5 September 2003. Rinesh was a gentle and caring person who had much to contribute to medicine and his loss is keenly felt by his teachers and fellow students. Our thoughts are with Rinesh's family and friends.



RINESH BHULLAR

## John Henry Winter Birrell OAM, ISO

MB BS 1950, LLD (HON CAUSA MON), FRACP, FAMA

1924—2003

**C**ARING, COMMITTED AND courageous, a visionary, a pioneer, a fine Australian ... these words have been used to express some of the characteristics of John 'Doc' Birrell. Born in St Kilda, John's caring qualities were demonstrated very early in life when, on losing his mother, he and brother Bruce took on the care of their younger brother Robert, who was nine at the time.

Sidney Birrell, John's father, had served in the First World War, and was to become president of Melbourne Legacy Club in 1949, but encouraged John to study medicine because doctors were exempt from war service. Accordingly, John began his medical course at Melbourne University in 1942, completing his first year with ease. He then defied his father and joined an army unit in Cowra. He was soon found and returned to university where, unsurprisingly, he failed second year, which enabled him to rejoin the army. He was posted to Papua New Guinea, where he joined the Medical Corps, working in casualty clearing stations.

John returned to the medical course, repeating second year in 1944. In his fifth year he pursued forensic medicine and in his final year won the forensic medicine prize. A year at the Alfred Hospital was followed by a role in the pathology department at Melbourne University, where he lectured in pathology from 1952 to 1956 and was assistant curator for the medical school. He was also a senior lecturer at Monash University.

In 1956 John took on the role of assistant coroner's pathologist at the Melbourne city morgue and in 1957 was selected by Arthur Rylah, Victoria's chief secretary, to be police surgeon and to do blood-alcohol estimates of road crash victims.

On call twenty-four hours a day and exposed to the carnage on Melbourne roads, his anger at the increasing number and severity of the fatalities and injuries was soon aroused as he administered morphine to crash victims and helped extract people from wrecked vehicles. He aggressively promoted the fitting of seatbelts to police vehicles and crash helmets for police motor-cyclists. Both were adopted in 1959.

Joining the Traffic Injury Committee of the NHMRC in 1960, John's influence was soon obvious when the committee recommended that seatbelts be fitted and worn in vehicles. A second recommendation, to have hotel closing hours extended

beyond 6pm—a Birrell passion—did not receive the same support. It annoyed the NHMRC chairman at the time, who said this was outside the charter of the committee, but at least John had put the issue on the agenda.

A paper by John on the benefits of wearing seatbelts and crash helmets appeared in the *Medical Journal of Australia* in April 1961. He worked tirelessly with the media on seatbelt promotion, influenced politicians and parliamentary road safety committees, and spoke constantly about road safety issues to schools and community groups. The mandatory wearing of fitted seatbelts by drivers and front seat passengers became law in Victoria at midnight on 1 January 1971.

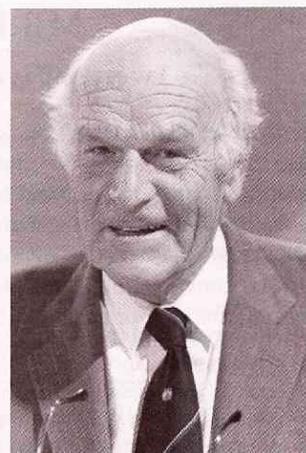
John's paper on alcohol as a factor in Victorian road collisions was published in the *Medical Journal of Australia* in 1960. Lindsay Thompson, assistant chief secretary to Arthur Rylah and a future premier, decided to see for himself what John was talking about regarding drivers with excessive blood-alcohol levels, and spent Saturday nights in John's car visiting accident scenes. He recalls: 'At first I was sceptical, as was the chief secretary. It was this exposure to crash scenes that had me report that there was a major drink-driving problem, and despite objections from the legal profession and motoring organisations, the *Breathalyser Bill* was legislated on 20 December 1961.'

On 1 February 1966, six o'clock closing ended and it became an offence to drive with a blood alcohol level exceeding .05 per cent. As Mick Miller, police officer for forty years and chief commissioner of police 1977-87 said: 'Nobody saw there was a problem with drink-driving until John came along. He stood up to vested interests, car manufacturers and road organisations.'

In 1974, without the financial support of government or other alcohol and safety bodies, John Birrell went to Toronto, to the sixth International Conference on Alcohol, Drugs and Traffic Safety (ADT). The seventh international conference was held in Melbourne in January 1977, with John as president, and was an outstanding success.

The wide-ranging recommendations from the conference were a fitting testimony to his invaluable road safety work over twenty years. In February 1977 he wrote: 'If the seventh ADT had been in Toronto, London or New York, we might have rated a couple of half columns instead of the mass of material presented to the public here on radio, TV and in the press. There is no doubt this will pay off in years to come.' Indeed it has, as the Victorian road toll dropped from 938 in 1976 to 398 in 2002.

John's citation at the 1986 ADT conference recognised his 'outstanding contributions to the advancement in alcohol, drugs and traffic safety'. Dr Donald Hossack, consulting surgeon to the city coroner and blood-alcohol spokesman for the road trauma committee of the College of Surgeons recalled: 'John was a lone voice for a long time on road-safety issues. His pioneering work in the driver blood-alcohol field set the scene, inspiring me and others of our committee to focus on excessive drinking, particularly the compulsory taking of blood samples of injured road crash victims in hospitals. Data from these tests was a key factor in the introduction of booze buses in 1990.'



JOHN BIRRELL

John felt very strongly about child abuse and had papers on this published in the *Medical Journal of Australia* in 1966-68. He was also the patron of Australians Against Child Abuse.

After his retirement as police surgeon, John went into private practice in Foster for five years then moved to live at Point Lonsdale. Until five years before his death he worked from the Community Health Centre in Queenscliff.

John is survived by Jackie, his wife of fifty-five years, his sons John, Mike and Simon, their partners Sally, Robyn and Margaret, and his seven grandchildren who adored him.

*Donald Gibb*

*This is an edited version of an obituary first published in The Age*

A JHW Birrell Fund has been established to support an award (prize or scholarship or fellowship) for medical students who study or work on alcohol, drugs or traffic safety. Donations towards the award can be made by cheque made out to 'The University of Melbourne', with an accompanying note indicating the purpose of the donation and the name and address for the receipt. Donations should be sent to: Ms Robin Orams, Communications and Alumni Office, Faculty of MDHS, Medical Building, University of Melbourne, Vic 3010. For further information telephone: (+61 3) 8344 5889 or email: robinjo@unimelb.edu.au.

A copy of John Birrell's recently published memoirs, *Twenty Years as a Police Surgeon*, can be bought for AUD\$29.95 plus \$8 handling costs, from Brologa Publishing, PO Box 12544, A'Beckett Street, Melbourne, Vic 8006. Ph (+61 3) 9671 4730, Fax (+61 3) 9671 4741 or email markzocchi@brologapublishing.com.au. Copies will also be distributed to bookshops through Pan Macmillan.

## James Murray Calvert

MB BS 1953, FRACS, FRCS

1924—2003

**J**AMES (JIM) CALVERT died on 4 July 2003, in Melbourne, at the age of seventy-nine. Born at Mt Bute, near Ballarat, he attended the local school before progressing to Ballarat Grammar, then worked briefly for the Commercial Bank of Australia before enlisting at the age of eighteen.

After distinguished service with the second 8th Field Regiment in Townsville and Borneo during the Second World War, Jim embarked on a medical course at the University of Melbourne. He graduated in 1953 and did his residency at the Royal Melbourne Hospital, where he developed an interest in neurosurgery during a term working for Reg Hooper. After a year at Footscray Hospital as surgical registrar, Jim undertook post-graduate general surgical, then neurosurgical, training in the UK. At Birmingham he worked with Professor Brodie Hughes, an early proponent of stereotactic surgery.

On his return to Melbourne, Jim was appointed to the staff of the Alfred Hospital as assistant neurosurgeon to Keith Bradley. In 1966 he was appointed to the Austin Hospital and the Repatriation Hospital at Heidelberg. He served these two institutions as senior neurosurgeon for many years and contributed to many committees at each hospital with quiet advocacy and commonsense observations. He retired from the Austin in 1987 and from the Repatriation Hospital two

years later. His private practice continued until August 2002, combining medico-legal work with ongoing review and care for his long-term patients.

As well as his work at the Austin, where for almost twenty years he shared an on-call roster with the late John Woodward, Jim was sole neurosurgeon to the Peter MacCallum Clinic. This involved the treatment of many acute cancer sufferers, often requiring late night urgent decompression of the spinal cord.

A highly dedicated doctor, Jim spent many hours in the operating room caring for patients who were deeply appreciative of his skills. He had a retiring and courteous personality and a willingness to help patients no matter the time required. A small mark of his relationship with his patients could be measured by the number of gifts of chocolate he received at each outpatient clinic! He had a particularly strong connection to veterans, who he treated with comradely compassion, and was closely involved with the RSL as a member, and later vice-president, of his regiment.

Jim served the Neurosurgical Society of Australasia for many years, as treasurer for a record stint, then as president in 1980. He maintained an active interest in the society and attended scientific meetings regularly up to his death.

Following his retirement, Jim moved to a small country property with his wife Marnie, whom he had met during her time as a nursing sister at the Royal Melbourne Hospital. His time was filled with his children, grandchildren and many other activities, and he remained very fit and well until his final, unexpected illness. Although unwell following treatment for his lung tumour, he was able to march at the head of his regiment on the Anzac Day preceding his death. He is survived by Marnie, his four daughters and his son.

*Gavin Fabinyi*

## David Miles Danks

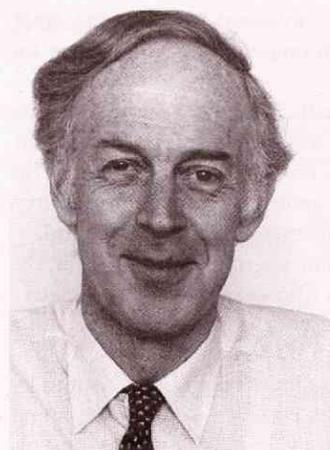
MB BS 1954, MD 1957

1931—2003

**D**AVID DANKS PLAYED the leadership role in establishing clinical genetics and human genetics research in Australia. He had a very clear vision of his professional aims and set out, single-mindedly, to achieve these goals. His outstanding achievements were setting up the Murdoch Institute for Research into Birth Defects at the Royal Children's Hospital and the Victorian Clinical Genetics Service. He was foundation director of both.

Born into a family well known in Melbourne commercial circles, David's childhood was somewhat marred by being kept in bed for over twelve months on the basis of a false diagnosis that a cardiac murmur was due to rheumatic fever. In late middle age, this was shown to be due to an atrial septal defect. He was educated at Camberwell Grammar School, where he was both school captain and dux. He maintained a great attachment to the school and for many years was a member of its council, including three years as its chairman, and played a major role in the school achieving independence from the Anglican church.

David graduated MB BS from the University of Melbourne in 1954 and was awarded his MD (by examination) in 1957. His first postgraduate year was at the Royal Melbourne Hospital. Subsequently, his whole professional life was associated with the Royal Children's Hospital. He was greatly influenced by the late



DAVID DANKS  
Photograph RCH archives

Howard Williams, who was for many years his mentor and encouraged his interest in genetics. After completing his paediatric training, David gained further experience in Newcastle-upon-Tyne (neonatology), in genetics with Cedric Carter at the Hospital for Sick Children in London and with Victor McKusick at the Johns Hopkins Hospital, Baltimore.

Soon after his return to Melbourne and the Royal Children's Hospital, David was appointed deputy

director (to Howard Williams) of the clinical research unit then, in 1967, head of his own genetics research unit. He also had an appointment as a general paediatrician, where he demonstrated his impressive clinical and teaching abilities although these were not his main interests. Following his disappointment at not being appointed the foundation director of the Royal Children's Hospital Research Foundation, he accepted appointment as half-time reader in human genetics in the university's department of genetics while continuing his research work at the Royal Children's Hospital. In 1975, when the university was having difficulty filling the Stevenson Chair of Paediatrics following the retirement of Vernon Collins, David was asked by the then dean of medicine, Lance Townsend, to apply. This appointment assisted David in developing the Genetics Research Unit into the Birth Defects Research Institute in 1981. He also played a major role in fostering clinical and basic research as the Royal Children's Hospital's coordinator of research. His interests were not in undergraduate teaching but he was fortunate in having John Court, and then Max Robinson, to run the medical students' program.

In 1983, when ill health forced Donald Cheek to retire prematurely as director of the Royal Children's Hospital Research Foundation and the Royal Children's Hospital Research Foundation Professor of Paediatrics, David took up these appointments. He now devoted himself to developing his research institute, which in 1986, with major support from Dame Elisabeth Murdoch and her family, the Brockhoff Foundation and other trusts, became the Murdoch Institute for Research in Birth Defects. He received substantial NHMRC funding, testifying to the excellence of the work of the institute. Difficult and complex negotiations led to his relinquishing the directorship of the Royal Children's Hospital Research Foundation but he retained the Research Foundation Chair of Paediatrics, which was discontinued on his retirement in 1995. He retired at the age of sixty-four to allow his successor to prepare for the next five-year round of NHMRC funding. David was succeeded as director of the Murdoch Institute by Professor Bob Williamson who continued David's research in genetics but also achieved the amalgamation of the Murdoch Institute and the Royal Children's Hospital Research Foundation into the Murdoch Childrens Research Institute.

David's great skill was in bringing together an outstanding group of scientists, including Dick Cotton, Andy Choo, Henrik Dahl and Julian Mercer, providing them with a stimulating environment and ensuring they had excellent facilities in

which to undertake high quality research. He was very much a 'hands-on' director which ensured high standards, even though it limited individual initiative somewhat, which some found difficult. His major personal research contribution was identifying copper deficiency as the cause of the rare congenital disorder, Menkes Syndrome. He recognised that the unusual hair in infants with Menkes Syndrome had some resemblance to the abnormal wool in copper deficient sheep. His vision of having an integrated research, teaching and clinical service in human genetics was the key to his success, however, and must be seen as his great contribution. Having a single clinical genetics service in Victoria for both children and adults has avoided unnecessary duplication, has provided excellent training opportunities and has stimulated much clinical and basic research in the Murdoch Institute.

Following his retirement from academic work, David played an increasing role in the publicly-listed family business, John Danks and Son (Danks Holdings Limited) and was its chairman for a number of years. Unfortunately, his latter years were greatly troubled by relentlessly progressive Parkinson's Disease.

David received much national and international recognition. He became an Officer of the Order of Australia in 1990 and was awarded the Royal Children's Hospital Gold Medal in 1989.

David is survived by his widow June (nee McMullin), his five children (Andrew, Philip, Jenny, Peter and Alister) and twelve grandchildren of whom he was intensely proud. June, Andrew and Jenny are also graduates of the medical school. Over the years, June provided tremendous support to David and joined with him in the frequent entertainment of his staff and their many local and overseas friends and colleagues.

*Peter Phelan*

## Lachlan Hardy-Wilson AM

MB BS 1941, FRCOG, FRACOG

1916—2002

**I**N SEPTEMBER 1941, the first year the medical course was shortened as a result of the war, Lachlan Hardy Wilson (the hyphen was years later) and I graduated in medicine. Soon after our arrival in the dissecting room Lach had been smitten by the charm of a fellow student, Jean Hill, and he courted her throughout the course. Jean did her first year residency at the Royal Melbourne Hospital, Lach was at the Launceston General—they were married in 1942 and are survived by four daughters—Margaret, Elizabeth, Cate, Diana—and their families.

Lach and I became friendly through a mutual interest in rowing. Our careers overlapped; sometimes we were adversaries, but we did row together in two Melbourne University crews, with a win on the Nepean in 1939. After graduation Lach continued to take an active interest in rowing, and coached a number of Launceston Grammar crews with considerable success.

His life's work was in Launceston. For some years he was in general practice, then he spent a year in England training in obstetrics and gynaecology, becoming a member of the English college in 1954 and a fellow in 1967.

In 1978 Lach became a foundation fellow of the Australian College of Obstetrics and Gynaecology. He became known as a skilful and caring doctor: in forty years of practice he delivered some 9000 babies and developed a considerable reputation in gynaecological surgery. He retired at the age of eighty.

He was an active member of hospital boards (Queen Victoria Hospital and St Luke's Private Hospital), school boards and committees associated with the AMA and his specialist college.

Lach Wilson loved music and was interested in the arts. He served on the Tasmanian Arts Council, the Launceston



LACHLAN HARDY-WILSON

Philharmonic Society, the Hobart Theatre Royal Management Board and was state president of the Arts Council of Australia.

In 1968 he took up bush walking, both on his own and as a guide. He made newspaper headlines in 1976 when he was trapped for two days in a blizzard in the Central Highlands. He was walking alone, which he admitted 'you should not do', but was well equipped with protective clothing, a tent, provisions and a good book and, when rescued, he was none the worse for the experience.

In 1990 Lach was named Launceston Citizen of the Year

and in 1991 he was appointed a Member of the Order of Australia for services to gynaecological oncology and the arts.

Lachlan Wilson was born in Sydney in 1916 and named after Governor Macquarie. His father was William Hardy Wilson, a forward thinking, visionary, and consequently controversial, architect. The atmosphere at home was described as 'rather bohemian'. His formative years were unsettled, his father travelled a lot and Lach relied on his mother. He had fourteen changes of school in NSW and England before completing his secondary education at Launceston Grammar School.

I found him a rather quiet and reflective person with firmly held views and much determination, as evidenced by the driving force he became in Launceston medical and cultural life.

Sadly, his final years were lived in considerable discomfort. He was cremated and his ashes scattered in the wilderness at Mt Victoria (Tasmania).

*James Guest*

## Nathaniel Albert Alfred (Nate) Myers AM

MB BS 1945, MD 1989, FRCS, FRACS

1922—2004

**N**ATE MYERS WAS a remarkable paediatric surgeon. There can be few in paediatric surgery, or indeed in paediatrics, who have contributed more. His name will long be remembered by the many thousands of families he helped and by the paediatric surgeons he influenced.

Educated at University High School, where a brilliant career was rewarded with a Commonwealth scholarship to study medicine at the University of Melbourne, Nate graduated with honours in 1945 and was appointed a junior resident medical officer to the Royal Melbourne Hospital.

In 1946 he was appointed to the resident staff of the Royal Children's Hospital where he remained for the next eight years, the last three as chief resident medical officer. Even that early in his career he was more than competent, hard-working and always available, day or night. These qualities remained with him throughout his working life. Nate really cared for children and had a rare ability to relate to them and their parents. At this stage he was undecided whether to become a physician, a surgeon or a paediatric psychiatrist. He could have performed equally well in any of these disciplines but, having decided on surgery, he undertook extensive training at both the Royal Melbourne and Royal Children's hospitals.

Between 1955 and 1957 he continued his training at the Hospital for Sick Children in London, where he met and married his first wife Anne. Together they had four children—Jane, John, Carolyn and Richard.

Returning to Australia he joined the senior staff of the Royal Children's and remained there for more than fifty years, variously as surgeon-head of unit; chairman, department of surgery; senior surgeon and, after retirement, senior consultant surgeon. He also held consultant appointments at Fairfield, Box Hill, Royal Women's, Mercy Maternity and St Francis Cabrini hospitals throughout his career.

In 1957 Nate began private consultant practice. He was a superb consultant and a particularly able diagnostician.

He demonstrated this on numerous occasions, at times to the chagrin of the referring doctor. Yet Nate was always generous and courteous in dealing with other doctors and particularly reassuring to parents during anxious or difficult situations.

His care of his patients was total and his own referrals were appropriate even though he was often capable of managing non-surgical disorders himself. In recognition of his work with sick and handicapped children, Nate was awarded the honour Member of the Order of Australia in 1981.

Although experienced in most areas of paediatric surgery, thoracic surgery was his particular area of expertise. He was involved in surgery of the heart in the early development of the specialty, but he will be particularly remembered for his monumental work on oesophageal atresia. Along with the late Russell Howard, he was one of the pioneers of surgery for this condition, and a world authority.

Nate always enjoyed teaching, particularly at the post-graduate level. The university department of paediatrics recognised this skill and he held the title professional associate through much of his working life. He was still teaching late into his seventies.

There is no doubt that the Royal Children's Hospital was his great love. He visited almost daily and, apart from his surgical commitment, he was a member of many sub-committees and at one time chairman of senior medical staff. He was a superb organiser and sixteen years ago set up the RCH medical alumni association, remaining as secretary until one year before his death.

Nate was very active in the Royal Australasian College of Surgeons, as a founder member of the board of paediatric surgery, chairman of the Victorian state committee and chairman of the archives committee. He lectured extensively overseas and held honorary memberships of paediatric surgical societies in many countries. His contribution to the literature was enormous. He edited or contributed to at least a dozen books, wrote alone or in consultation with colleagues more than seventy scientific articles and was editor of major international surgical journals.

But life was not all work. In his earlier years Nate loved a party. He played good tennis and was an avid cricket fan. But it was watching his beloved Geelong football team in action with his son John that he really enjoyed.

In later life Nate married Julie Nicol and with her sons James and Stuart he enjoyed a wider family for sixteen years. Julie gave devoted support to Nate in his chronic illness, particularly during the last year of his life.

*Max Robinson with the assistance of Nate's children and Durham Smith. This is an edited version of an obituary which first appeared in The Age*

NATE MYERS,  
Photograph RCH archives

## Stephen Lewis Rosen

MB BS 1991, BMedSc 1991, FRACP

1966—2003

WHEN A MEMORIAL celebration of Stephen's life was held in late October 2003, an unprecedented throng of students, junior and senior medical staff, nursing, paramedical and general hospital staff, as well as former students and colleagues, gathered in the Brenan Hall at St Vincent's Hospital, to honour their well-beloved clinical colleague, teacher and friend, to whose lives he had made such an outstanding contribution.

Stephen Rosen was born in Melbourne into an exceptionally close, warm and talented family. He was educated at Mount Scopus, where his thirst for knowledge and versatility of talents were recognised from early years. He excelled in academic subjects, especially sciences, played tennis and squash, and also played the clarinet in the school orchestra, developing what was to become a life-long love of music.

Stephen won school prizes for Hebrew and for academic excellence in his final year, as well as the Westpac maths competition and Alliance Française prize.

Stephen entered the University of Melbourne medical school in 1985 and did his BMedSc degree in 1988, working in Ian McKenzie's department at the university on a breast cancer study entitled *Immunological Analysis of Tumour Associated Antigens*, for which he won the BMedSc Prize. In 1989 he entered the St Vincent's Hospital clinical school, in which he was later to become an irreplaceable teacher, a unique role model and mentor.

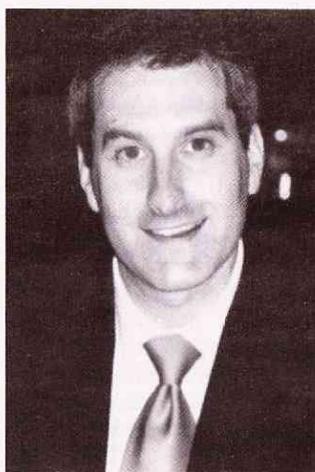
Stephen was a model student: his keen, enquiring mind, outgoing personality and his breadth of interest in clinical medicine were appreciated by his teachers. His excellent rapport with patients stemmed from his exceptional personal qualities. His clinical interests were eclectic, though firmly based in clinical medicine rather than surgery, and he won the Herman Lawrence Prize in Dermatology in his fourth year.

On graduation Stephen stayed at St Vincent's for physician training, initially considering specialisation in nephrology, before discovering his clinical métier in endocrinology and general medicine.

Working with Professor Frank Alford in the department of endocrinology and in the professorial medical unit as senior registrar, Stephen embarked on what was to be one of the greatest joys of his life—teaching medical students. He joined the senior medical staff at St Vincent's Hospital in 1999 and enthusiastically put in long hours in out-patients and ward service, contributing actively to clinical meetings in the departments of internal medicine and endocrinology, as well as interdisciplinary symposia and conferences.

Though physically weakened during the last two years, Stephen assisted Associate Professor Glenn Ward in providing an additional private diabetic clinic, which greatly enhanced services for the increasing number of diabetic patients in the community. In his role as general physician, his contribution to the general medical and infectious diseases clinics was as much valued for his rapport with patients and staff, as his exceptional clinical acumen and intellectual flexibility. He was incredibly resilient and in spite of rapidly deteriorating health would fulfil all his clinical commitments.

Stephen's strong clinical commitment was an inspiration to the many medical students who were fortunate to have him as a teacher. He enjoyed devising clinical scenarios to discuss with his students, and his regular late afternoon teaching sessions were always packed. Nothing was too much



STEPHEN ROSEN

trouble for Stephen, who was an integral part of the clinical school and willingly took part in junior and senior teaching programs, as well as post-graduate physician training. He gained great pleasure from the students' academic success, especially from awakening their confidence and enjoyment in solving medical problems.

In spite of his ability, success and elegance, Stephen had a natural humility and was a wonderfully supportive friend and colleague. He was lost for words when final year students unanimously elected him '2002

Teacher of the Year', with a standing ovation at the valedictory clinical school staff-student dinner. The students' appreciation of his part in their medical training touched him deeply, as he had felt privileged to be their teacher. An honour in his name has now been perpetuated by the creation of an annual clinical school award for excellence in teaching.

In his short life, Stephen Rosen made an outstanding contribution to the medical profession, inspiring a generation of students and post-graduate trainees to achieve their potential and provide the highest clinical standards for their patients. He is greatly missed.

*Wilma Beswick and Jackie Walters*

## Margaret Joan Sanders

MB BS 1953

1928—2004

MARGARET SANDERS' LIFE was devoted to medicine, particularly at the Alfred Hospital, and to her school, family and friends.

Margaret's secondary education at MCEGGS (now Melbourne Girls Grammar School) included two years at Marysville when the school premises in South Yarra were requisitioned by the RAAF. The first year of her medical course in 1947 was spent at the Mildura RAAF base, where the University of Melbourne established a temporary campus from 1947 to 1949 to accommodate the large number of returning service personnel. Margaret was a leader in fostering the close ties within both groups which continue to this day.

After two years residence at the Alfred Hospital Margaret was appointed the first registrar in Ewen Downie's newly established diabetic and metabolic unit. Two years as the Sol Green Research Scholar followed and she remained a clinician in that unit until 1981. Her published papers related to factors affecting glucose tolerance and to the oral treatment of diabetes. Following her marriage, Margaret continued part-time medical practice while raising three children, becoming more active after the children reached school age. In 1974 she commenced retraining with the Family Medicine Program and at the Royal Women's Hospital; sixteen years with family planning clinics followed.

Margaret was a strong advocate for education, health services and social justice. To each of these she generously gave herself and her talents. For her school she worked on many committees including fifteen years on the school council; a special interest was fundraising and establishing a bursary for



MARGARET SANDERS

a girl with special needs who might not otherwise be able to attend the school.

She served medical women as councillor and treasurer for both the Victorian Medical Women's Society, the Australian Federation of Medical Women and internationally as a member of the Finance Committee of the Medical Women's International Association. She was a leading member of the Alfred Residents and Graduates Association and the Alfred Medical Wives.

Margaret's warmth and positive attitude enabled her to weld each group or committee

she was a part of into a working team. She always identified and promoted the strengths of others while overlooking shortcomings. Her attention to detail, considerable organising skills and financial talents will be missed in many places. With all her outside interests, Margaret's family—Charles, their children Peter, Richard and Merial, and her sister Jennifer—remained the centre of her life. The warmth of the home she created made it a mecca for her many friends; her grace and fortitude in her final illness an example.

*Pat Scrivenor with the Clark family*

## Lorna Verdun Sisely OBE

MB BS 1942, MS 1949, FRACS, FACS, CM

1916—2004

**L**ORNA SISELY WAS born in Wangaratta, Victoria, in the year of the Battle of Verdun. She attended the local school then was a boarder at MLC from the age of fourteen years. Unusually for a girl at that time, Lorna had a burning ambition to study medicine but achieved it only after a struggle against parental opposition and success in the first year of a science degree course. She was a most distinguished student, winning exhibitions in biochemistry, pathology and dermatology.

Lorna graduated in 1942 and became an RMO at St Vincent's Hospital for two years. Her ability and potential were recognised by Sir Hugh Devine and Leo Doyle who offered encouragement and a job as a private assistant. Further study gained her the FRACS in 1947, the first woman in Victoria to be registered in general surgery. Lorna was appointed a demonstrator in anatomy and pathology at the University of Melbourne and continued her studies, achieving an MS in 1949.

In 1947 a post was advertised for an honorary surgeon at the Queen Victoria Memorial Hospital (QVMH). At that time the surgery was shared between the gynaecologists plus one doctor with an MS, and two self-trained surgeons—all women. Lorna was encouraged to apply and was appointed to an outpatient clinic, thus beginning her long association with the hospital. She found that there was a great need for a urologist and went abroad for further study in this specialty, having been awarded a Gordon Craig Scholarship from the RACS. She returned from this trip to develop the surgical service of the QVMH. As specialist areas began to emerge Lorna organised the appointment of male consultants to cover them. She became an assistant at the Royal Children's Hospital and continued her interest in urology, becoming the first woman to be invited to join the Urological Society.

The workload was very heavy and it became obvious to Lorna that she would need help as the service at the QVMH grew. She travelled to the USA and to England gaining experience and looking for recruits: as a result of that trip I had the good fortune to come to join the staff.

The opening of the male ward and the arrival of the Monash University departments of obstetrics and gynaecology and paediatrics emphasised the need for the general side of the hospital to be enlarged. Lorna had the vision to appreciate this and, supported by the rest of the staff, she encouraged the board of management to increase the number of appointments, not only in the general units but also in the specialist clinics. As a result of this the unprecedented step of appointing men to the senior medical staff was taken. When the time came for the Queen Victoria Medical Centre to become the Monash Medical Centre at Clayton, the excellent obstetric and gynaecology and paediatric teaching units were well supported.

Lorna perceived a community need and was the founder of the breast clinic at QVMH, which any woman who was worried about breast lumps or symptoms could attend without formal referral—the first in Australia. She was indeed a meticulous, excellent surgeon, and a master planner. Lorna Sisely gave long and dedicated service to the hospital and the community and was a great pioneer for women in surgery.

*Joyce M Daws*



LORNA SISELY

## James Smibert

MB BS 1935, FRCOG, FRACOG

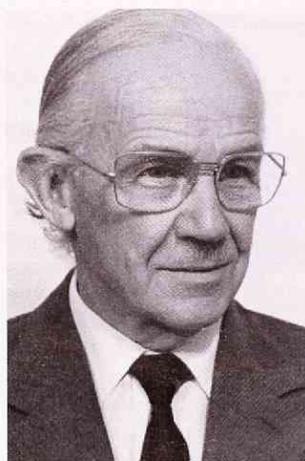
1911—2003

**J**AMES SMIBERT ENTERED the University of Melbourne medical school in 1930 after completing his schooling at Melbourne Grammar. He was a resident of Trinity College for four years and graduated in 1935 with third class honours in medicine and obstetrics and gynaecology.

Following his graduation he worked at the Alfred Hospital then, in June 1937, began obstetrics and gynaecology training at the Royal Women's Hospital. Just over twelve months later he went, as ship's surgeon, to the UK to complete his postgraduate training.

Passing his specialist exams in 1939 he then worked as a house surgeon at the Royal Surrey County Hospital until January 1940. While there, he met Helen Winslow, an Irish physiotherapist, whom he married in February 1940. Five weeks later James left for West Africa, having joined the Royal Army Medical Corps. He spent three years in Sierra Leone, then served in Nigeria, India and Burma, during which time he returned to the UK only twice. At the end of the war he met his eldest daughter, aged nearly two, for the first time.

James returned to London following the war and worked there for a year, but with the introduction of the National Health Service, he returned to Australia with his family.



JAMES SMIBERT

Between 1948 and 1964 James was in general practice at the Toorak Clinic, where he did most of the obstetrics. He loved his work in general practice as he believed obstetricians had a responsibility not only to care for women during their pregnancy and at the time of delivery, but also to the subsequent care of the child.

In June 1949 he joined the staff of the Royal Women's Hospital, first as an honorary gynaecological surgeon to outpatients, then as an honorary obstetrical surgeon to outpatients, and subsequently

honorary obstetrical surgeon to inpatients in 1963. At that time he had to leave his practice at the Toorak Clinic as the rules of the Royal Women's Hospital prevented inpatient surgeons from holding anything but consultant specialist positions. He remained on the honorary staff until he had to retire at the age of sixty.

It was then that Professor Sir Lance Townsend employed him in a part-time position as a first assistant in the university Department of Obstetrics and Gynaecology (professorial unit), a position he held until 1978. He remained in specialist private practice until May 1989 when, at seventy-eight years of age, he was finally persuaded by a colleague to hand over the care of his last two obstetric patients when this friend likened his situation to a batsman, desperate to make a century, going out in the nineties.

One of the great joys of his career was the total management of the patients whom he had delivered: encouraging the establishment of lactation and dealing with the problems that occur. His work in this area was clearly recognised by the Nursing Mothers' Association of Australia and he was the first male member of that association.

Although James Smibert had been predominantly in private and hospital practice, he was certainly active in assessing the calibre of obstetric care provided at many hospitals and clearly assessed the writings of others within the specialist journals. He was not averse to questioning accepted practices and it was quite clear that he saw some of the alleged advances within the discipline as being unnecessary and potentially dangerous. He was renowned for being conservative in clinical practice, but this certainly did not mean the care he provided was inappropriate, or more likely to result in adverse outcomes.

From the 1950s to the late 1990s, James was a prolific writer to 'Letters to the Editor' sections in the newspapers: his letters should provide a unique glimpse of history over those fifty years.

James loved music and was still playing with the Victorian Recorder Orchestra the year before he died.

His other great love was golf. A founding member of WHAGL (Women's Hospital Association of Golf Lovers) he played his last game at the age of ninety.

James and Helen celebrated their sixtieth wedding anniversary in February 2000 and he was devastated when she died that October. He celebrated his ninetieth birthday at Lorne where he insisted that he should surf with his children and grandchildren.

After having pneumonia in March 2002, James never regained his former health and was unable to return home. His health progressively deteriorated and he died on 2 September 2003. He is survived by his four daughters and ten grandchildren.

*Elizabeth Smibert and Roger Pepperell*

## Ross Wharton Webster

MB BS 1947, FRACP, FRACGP, FAFPHM, FAMA

1924—2003

ROSS WEBSTER SERVED the community and the medical profession for the amazing span of fifty-five years from his graduation to his retirement in late 2002. His life's work included, consecutively, twenty years in rural general practice, fifteen years as foundation professor of the department of community medicine at the University of Melbourne, and fifteen years first as chairman, and then as principal claims manager, for the Medical Indemnity Protection Society. Along the way he served on countless boards, councils and committees, and spent time as chairman of most. His service to the medical profession and the community was without parallel.

Ross was the third child of Adelaide and Reginald Webster. His father was the first pathologist to be appointed to a public hospital in Victoria—the then Melbourne Children's Hospital.

Six months after graduation Ross volunteered to join the British Commonwealth Occupation Force in Japan. After a year's service he returned to the Royal Melbourne Hospital. He completed his post-graduate training then moved, with his new wife Marjory, to Horsham, in north-west Victoria, where he became the proud father of three children: Anne, Malcolm and Andrew. He joined a large multi-disciplinary medical clinic, and was also honorary medical superintendent of the Wimmera Base Hospital. That double workload still did not fulfil his desire for service and he stood for election to the Horsham City Council. During his six-year membership of the council he subsequently served as mayor.

Personal tragedy overtook the family with Marjory's death in 1972. Long hours of work both in his practice and attending to non-clinical commitments were no way to bring up a family, so Ross left the life he loved in Horsham, to return to Melbourne as the deputy director of medical services at the Cancer Institute. This provided orderly working hours and an opportunity to care for his family as both father and mother.

In 1974 Ross was appointed foundation professor of community medicine at the University of Melbourne. He had no illusions about the difficulties in funding and professional acceptance that lay ahead: when he took up his appointment he was provided with a small office and a secretary—who sat in the corridor outside.

Ross developed community medicine as a key component of the undergraduate medical curriculum and promoted primary medical care and epidemiology as significant fields of postgraduate study in the faculty. His was one of the first community medicine departments in Australia to initiate masters degrees.

He was a tireless worker for the university community, especially as chairman of the Board of Social Studies. He served as a member of the Academic Board and for some years was chair of its academic committee. He was also chair of the Social Biology Resources Centre.

Outside the university Ross chaired accreditation committees for a range of courses related to nursing education. The work of these committees resulted in nursing education being undertaken by universities, as opposed to the previous system of purely hospital-based training. He was chairman of the Health Advisory Council to the then Health Commission of Victoria and was later a member of the Health Services Review Council of the Health Department of Victoria. For nine years he was an active member of the Federal Administrative Appeals Tribunal.

In 1984 he was appointed visiting professor to the Chinese University of Hong Kong, the main purpose of which was to advise on the establishment of a department of community



ROSS WEBSTER

medicine in the recently created faculty of medicine.

Ross had an extraordinarily long involvement in medical politics. He was a member of the council of the Victorian AMA for thirty-three years; he was elected president of the Victorian AMA in 1977 and was its chair from 1978 to 1991; he was appointed a fellow of the AMA in 1979 and chaired the Federal Assembly, the then Australia-wide governing body of the AMA, between 1979 and 1985.

In his fourteen years as chairman of the Victorian AMA, Ross did not miss a single council meeting. In 1995, following his retirement from the council of

the Victorian AMA, Ross Webster was awarded the inaugural Medal of Merit of AMA Victoria for his many years of service to the profession, the community and the AMA. That medal has not been awarded since.

From 1983 to 1988 he was chairman of the Australasian Medical Publishing Company.

Ross was a director of several organisations connected with the medical profession—the Australian Medical Agency, the Victorian Medical Insurance Agency, the AMA Friendly Society and AMA Financial Services. His last such position, as chairman of directors of the AMA Health Fund, ended in 2002.

Thirteen years after the death of his first wife, Ross married Jill, then director of nursing education at the Cancer Institute. They were blessed with twenty years together. Jill's support of Ross in his final illness demonstrated not only her love and affection but also the skills and knowledge she had acquired as a specialist oncology nurse.

In December 1989, when Ross reached the university's mandatory retiring age as a professor, it never occurred to him to stop working. From 1990 to 1995 he was part-time director of medical services at two regional hospitals: Werribee, in Victoria, and Broken Hill, in NSW. He was chairman of the Medical Indemnity Protection Society from 1988 to 1998 and he continued, until late 2002, to manage legal claims made against medical practitioners. Literally hundreds of doctors in Victoria and NSW sought his wise counsel on medico-legal issues. For these doctors alone there is little doubt that he will be sorely missed.

Ross finally retired completely at the end of 2002, just before his seventy-ninth birthday, and only one year before his death.

In his entire working career Ross radiated integrity. He had a life-time interest in medical ethics and taught the highest ethical behaviour—principally by example. He was intolerant of questionable corporate behaviour, conflicts of interest, material or personal, and had no time for the specious arguments used to rationalise such behaviour.

The highlight of his career was without doubt his appointment to a foundation chair at the University of Melbourne. Regrettably, because of the mandatory retirement age, he was restricted to only fifteen years in this appointment. To quote the minute of appreciation on his retirement from the university:

Professor Webster has been an excellent contributor to the academic life and standards of the Faculty of Medicine and the university. He has forged invaluable links between the faculty and the medical profession and between the university and the community.

Ross Webster was to many doctors their friend, their mentor and, above all, their exemplar. He was a quiet and modest man, but his modesty is belied by a lifetime of achievement and service. The medical profession and the community at large will mourn his passing, but should also celebrate his life.

*Paul Nisselle.*

*This is an edited and abridged version of an obituary first published in The Age*

#### UMMS RECORDS WITH REGRET THE PASSING OF...

Ellis Abrahams, MB BS 1941	John Peter Harper, MB BS 1945	Anthony J Penington, MB BS 1985
Charles G Batten, MB BS 1946	John A Horton, MB BS 1949	John Perry, MB BS 1943
Garry Edward Wilbur Bennett, MB BS 1943	Henry H (Harry) Jackson, MB BS 1941	John L Pierce, MB BS 1963
Alec (Chick) Graeme Bond, MB BS 1949	Thomas John K Jamieson, MB BS 1941	Neuman Benjamin Pinkus, MB BS 1944
Graham H Brooke, MB BS 1942	Colin Juttner, MB BS 1935	Albert E Piper, MB BS 1940
Beresford J Butcher, MB BS 1934	Geoff Kurrle, MB BS 1935	Jacob A Poutsma, MB BS 1952
Henry Byrne, MB BS 1956	Terrence J Lee, MB BS 1929	William R Rigg, MB BS 1940
Harold Leslie Caplan, MB BS 1960	William (Bill) Leung, MB BS 1965	Michael Shaw, MB BS 1943
Ivo William Webster Charles, MB BS 1934	Joyce Esther Leveson, MB BS 1947	Charles Russell Wain, MB BS 1946
Denis Morley Clarke, MB BS 1943	Austin G Ley MB BS 1942	Francis Shine, MB BS 1953
Joan Whyte Cossar (Towns), MB BS 1946	Khin Loh, MB BS 1962	Mervyn H Smith, MB BS 1941
Henry Coutanceau, MB BS 1953	Alexander G (Sandy) Mathew, MB BS 1946	Fairlie Anderson Springall, MB BS 1948
Trevor T Currie, MB BS 1947	John W McCallum, MB BS 1952	John M Stewart, MB BS 1952
Uldi E Eglitis, MB BS 1970	James M McCracken, MB BS 1941	Eric Stock, MB BS 1949
Geoffrey C Gregory, MB BS 1950	Ernest J McIntyre, MB BS 1949	John Tange, MD 1983
Edward Grieve, MB BS 1927	Richard Allan Lyth Nance, MB BS 1956	James E Trathern, MB BS 1952
Helen B Grieve, MB BS 1963	John P Noonan, MB BS 1941	Charles Russell Wain, MB BS 1946
Ken R Griffiths, MB BS 1950	Andrew G Ostor, MB BS 1967	Quintin J Whitehead, MB BS 1944
Donald A Hall, MB BS 1948	Arthur Parkin, MB BS 1941	Graeme G Williams, MB BS 1951
Brenda G Hammersley, MB BS 1952		Eric Wollff, MB BS 1939

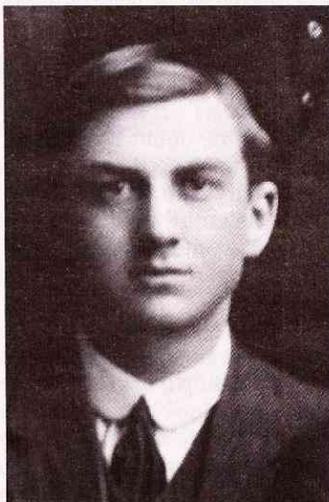
# BEQUESTS AND MEMORIAL GIFTS

## A BROTHER'S LEGACY

IT IS NOT uncommon for a personal event or change of circumstances to trigger a philanthropic act such as a donation or bequest to medical research or education. One such gesture was made by Dr Cedric Roche (1890-1960) with a grant to the University of Melbourne in memory of his sister, Dr Thalia Roche, who died in childbirth in 1927. The funds were provided to support instruction in practical obstetrics for senior medical students. The Thalia Roche demonstrations are presented annually by the Department of Obstetrics and Gynaecology.

Cedric Roche graduated in medicine at the University of Melbourne in 1911 and went on to obtain his MS and MD. He was well known and respected for his outstanding surgical work over forty years—first in Ivanhoe and then, from 1920, in Collins Street, Melbourne. In an obituary, his peers noted that his skills were much in demand, and his flawless technique and calm manner made him the ideal surgeon. They emphasised his strength, humility and kindness—he would operate on those less fortunate for no fee. He enjoyed sharing his knowledge and experience and had considerable ability as a teacher. They concurred that, in his passing, Melbourne had lost 'a great surgeon and one of nature's gentlemen'.<sup>1</sup>

Cedric's sister, Thalia Roche, was eight years his junior. Like Cedric, she was a medical graduate of the University of Melbourne (MB BS 1921). Practising first from rooms in a hotel in Dromana, she was well-liked and travelled around in a 'tin lizzy' Ford. After a few years Thalia sold her practice to marry a farmer from Glenorchy, near Stawell. Two or three years later, when she became pregnant, Thalia came down to Melbourne, booking in at St George's Hospital, Kew. During her early pregnancy she was well and did some local medical practice. A few days before she was due to give birth she was admitted to hospital, where a long and difficult labour ended with her death, at the age of twenty-nine years.



CEDRIC ROCHE  
Photo courtesy of the University of  
Melbourne Medical History Museum



DEVELOPING OBSTETRIC SKILLS IN THE EARLY TWENTIETH CENTURY. YOUNG DOCTORS, BABIES AND LABOUR WARD SISTER. ROYAL WOMEN'S HOSPITAL 1914-1915.  
Photo courtesy of the Royal Women's Hospital Archives

The death of Thalia Roche was tragic and unexpected, although such an outcome was all too common in pregnancies in the early part of the twentieth century. Cedric's shock at this event prompted him to do something to improve obstetric practice. He made a grant to the University of Melbourne, the interest to be used to give senior medical students instruction in practical obstetrics by competent practising obstetricians.

From 1960 until 1983 the Thalia Roche Demonstrations were given to sixth year students doing their two-week refresher course in obstetrics and gynaecology. Since 1983, the demonstrations have been given to fifth year students. The emphasis throughout has been on practical obstetrics, and the demonstrator 'must endeavour to secure that the maximum amount of individual instruction is available for each student'.<sup>2</sup> The Thalia Roche memorial demonstrations in practical obstetrics have played a part in developing the skills of many hundreds of Victorian doctors.

Robin Orams

### References

- 1 Obituary, Cedric Watson Gray Roche, *Medical Journal of Australia*, 22 October 1960, 674-675.
- 2 Regulation R7.13 Thalia Roche Memorial, the University of Melbourne.

## BEQUEST AND MEMORIAL GIFT INFORMATION

For information about establishing a memorial gift or making a bequest to the university, please contact the Manager, Fundraising Coordination, Development Office, the University of Melbourne, Victoria 3010, Australia. Telephone (+61 3) 8344 0896, email: bequests-development@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 (+60 7) 277 8860, email: usa-foundation@unimelb.edu.au.

In the United Kingdom, the Friends of the University of Melbourne Charitable Trust is a registered charity 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 (+0 20) 7630 1075, email: uk-trust@unimelb.edu.au.

13 November 2003

## PROTECTING AUSTRALIA FROM COMMUNICABLE DISEASES

By Emeritus Professor Richard Smallwood AO

**W**E LIVE IN unsettled and unsettling times. The metastability of the cold war is long gone, and the world faces many increasing and seemingly intractable problems. Not least of these is the resurgence of communicable disease and the re-appearance of bioterrorism, such that 'biosecurity' is a word with which we are all becoming very familiar.

### A history of human disease

English novelist Anthony Powell's greatest work was entitled *A Dance to the Music of Time*, which I think aptly describes the relationship of humankind, over many millennia, with the microbes that cause human disease.

For most of our time on this planet humans have been nomadic hunter-gatherers living in small, mobile groups. It would be very unlikely for outbreaks of diseases such as influenza or measles to have occurred in such communities, since, to be sustained, these diseases rely on substantial numbers in a population. On the other hand, organisms living in the soil, such as staphylococci; those causing low grade chronic disease such as various parasites; and certain infections transmitted from wild animals, such as yellow fever, might have been capable of infecting humans living in this way.

About 10 000 years ago humans began to live in settled communities and the ecology of infectious disease changed. Settlement was made possible by the discovery of grasses that could be cultivated and animals that could be domesticated and thus, as Jared Diamond put it in his excellent book *Guns, Germs and Steel*, humankind received 'the lethal gift of livestock'.

Many of the most serious human infectious diseases of recent times are of animal origin (malaria, plague, influenza) and large aggregations of people settled in close juxtaposition present a sitting target for disease vectors such as mosquitoes and organisms transmitted through human excreta or harboured by domestic animals and pests such as rats.

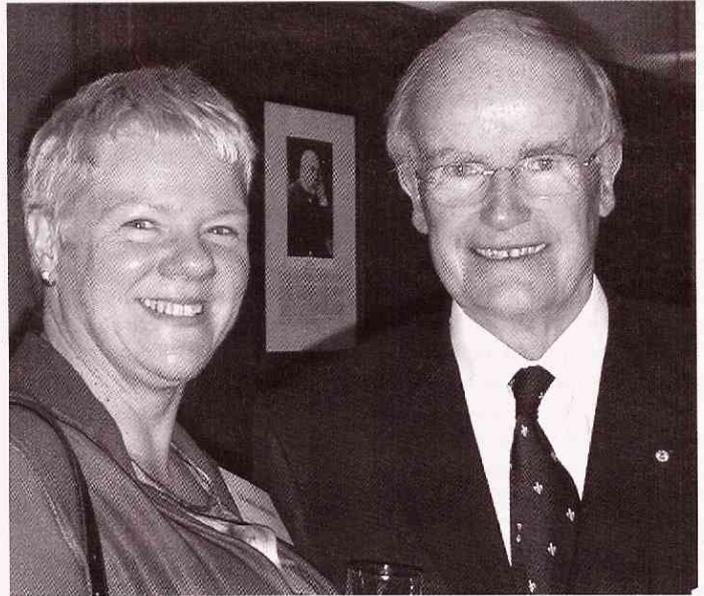
Agrarian communities cleared forests to cultivate crops, thereby exposing themselves to new vector-borne and animal-borne diseases. The larger and denser the human population, the more likely that endemic cycles of infectious disease would be maintained, with, from time to time, major epidemics.

In the last 2000 years a new phenomenon—exposure of one civilisation to the organisms of another with whom there had been no previous contact—has, on many occasions, led to the decimation of the naïve population.

The Antonine smallpox plague of Rome in the second century AD resulted from the return of the legions from Syria, where the infection was endemic. Much of Rome and the empire to the west was devastated, and it has been argued that this epidemic, as much as the aggression of barbarian tribes, led to the decline and fall of Rome.

The black death (bubonic plague) first arrived in Europe in the fourteenth century, most probably when Genovese merchants, fleeing from attack by Mongolians in the Black Sea, returned home with rats and their infected fleas on board their ships. Over the next few years bubonic plague killed one third of Europe's population.

The arrival of 'European' organisms in the New World was equally devastating. How was it possible for Cortez and his 600 Spaniards to defeat the mighty Aztec empire in 1520? The answer was probably in large measure, smallpox, which killed



RICHARD SMALLWOOD AND LOANE SKENE AT THE UMMS FUNCTION PRECEDING THE 2003 UMMS LECTURE.

half the Aztec population, including their emperor.

In the fifteenth and early sixteenth centuries the Mississippi Valley in North America was inhabited by large populations of native Americans. By the late seventeenth century these communities had virtually disappeared, wiped out by 'European' germs which had spread overland following the arrival of Columbus in the Americas in 1492, and the subsequent arrival of European settlers on the east coast.

In Australia in the late eighteenth century smallpox, typhus, typhoid, measles and whooping cough all wreaked havoc with the Aboriginal population, whose vulnerability was magnified by the disruption of their social structures and food sources, and the loss of their land.

*By 1970, then, in societies like Australia . . . it seemed that communicable diseases were well and truly routed.*

For most of the last two to three hundred years, in countries now regarded as part of the developed world, communicable disease has been in retreat. Thomas McKeown, in his remarkable book *The Role of Medicine*, cites three major reasons. He believes that improved nutrition was the earliest, and remains the most important and enduring influence, and he argues a persuasive case. Hygienic measures—better housing, less crowding, safe water supplies, effective sewerage and fewer disease-carrying vermin—have operated since the mid-nineteenth century. Medical interventions such as vaccines and antibiotics probably had little effect until well into the twentieth century.

By 1970, then, in societies like Australia, blessed with a stable social structure a good education system, a solid public health infrastructure, and armed with effective vaccines and potent anti-microbial agents, it seemed that communicable diseases were well and truly routed.

## Recent history

In the last two or three decades there have been an impressive number of new pathogens and their diseases identified. Perhaps the most striking has been HIV/AIDS. A recent World Health Organisation (WHO) estimate of the numbers infected worldwide is 50-60 million, with 30 million-odd deaths. China probably has one to two million infected now, and unless health authorities move faster than they have to date, that number will be four million in the next three to four years and over 20 million by 2010.

Hepatitis C has been less dramatic in its effects, but spread widely and insidiously in many countries through blood transfusion before it was detected. In Australia, there are some 200 000 individuals infected, and this pool is being sustained by intravenous drug use.

Other new pathogens have emerged: the Legionella bacterium; the viruses causing the dramatic and often fatal haemorrhagic fevers; the prion causing mad cow disease and variant Creutzfeldt-Jakob disease in humans; and most recently and startlingly, the coronavirus (a new coronavirus virus) which is the causative agent of severe acute respiratory syndrome (SARS). Jonathan Mann was quite right when he said in 1994: 'The history of our time will be marked by recurrent eruptions of newly discovered diseases'.

Just as important has been the resurgence of old diseases once thought under control. Tuberculosis kills over two million people each year. It continues to thrive where there is poverty, crowding and the collapse of social structures, and its spread has received an enormous fillip in countries where HIV/AIDS is rampant. Multi-drug resistance in many instances is making treatment ineffectual, thereby increasing both the spread and mortality of the disease.

Attempts to eradicate malaria in the latter part of the twentieth century failed dismally. In the early 1990s the number of cases worldwide actually rose from 250 million to 400 million with the increasing resistance of the anopheles mosquito to insecticides, and the resistance of the plasmodium itself to anti-malarial drugs. There are still over a million deaths from malaria each year.

Don't think that Australia is invulnerable. We have the right climate in parts of Northern Australia, the vector—the anopheles mosquito—is present, and there is the constant risk of malaria being introduced by infected individuals travelling from endemic countries. Some of you may remember the recent incident in a popular camping spot in North Queensland where local transmission of malaria occurred. Had there not been a prompt clinical diagnosis and vigorous local mosquito control, it is certainly possible that a pool of infected mosquitoes could have been re-established (we had endemic malaria in the north as recently as 1981), along with a group of infected people.

A further problem is the increasing prevalence of antibiotic resistant bacteria. I have a nightmare vision of the future: the latter half of the twentieth century is viewed as a 'golden age', when most of the bacteria that threatened human life could be effectively treated but profligate use of antibiotics to treat trivial or otherwise inappropriate human infections, and their widespread and at times questionable use in animal husbandry, has brought us to the 'post-antibiotic' era—once again, as in the days before penicillin, humanity is confronted with people dying from simple infections we used to be able to treat.

Australia is beginning to respond to this threat, as is WHO, but there is still a lot to be done. For example, antibiotics are still being prescribed in this country in thirty per cent of people presenting to doctors with a cold, and in eighty per cent of those presenting with acute bronchitis without evidence of any bacterial infection.

## Modern times

I would like to make some remarks about four entities: mad cow disease, smallpox, SARS and influenza. The first three are new or renewed threats which have had considerable impact in Australia, although there has not been a case of any of them within our borders except one case of SARS. The fourth, influenza, we are familiar with to the point that we have come almost to accept the death toll of 2000 or so Australians each year. But health authorities know that one day, possibly quite soon, a virus will emerge, probably from South-East Asia, which will sweep around the world and kill millions of people, as in 1918-19, unless we have done some skilful forward planning.

### Mad cow disease

Mad cow disease (bovine spongiform encephalopathy or BSE) is a striking example of a disease that represents an unintended consequence of human behaviour. BSE emerged in the UK in the early 1980s. The epidemic in cattle resulted from the practice of feeding meat and bone meal (MBM) from ruminant carcasses back to cattle as a protein supplement and extended from 1980-96.

The UK authorities were reassuring the public and the world well into the 1990s that no harm could come to people from BSE—the BSE prion was highly unlikely to 'jump species'. Well, as we know, it did, and in 1996 variant Creutzfeldt-Jakob disease (vCJD) was born, and the epidemic in humans began.

By 1999, when I became Commonwealth chief medical officer, we had had no identified BSE or vCJD cases, but it seemed that we would probably need to take more active preventive steps if we wanted Australia to stay free of disease.

### *Could vCJD be transmitted by transfusion, and if so, what should we do about it?*

On the animal side we were very fortunate that Australia had always been rigorous in its attitude to the importation of live animals and stock-feed, going back to the fifties and sixties. In 1988 importation of cattle from the UK and Ireland was banned, and cattle already imported were quarantined. Subsequently, we banned the feeding of locally produced ruminant MBM to ruminants and in 2001 we suspended the importing of beef and beef products from thirty countries. So far it appears that the Australian cattle industry is safe, but surveillance of our herds continues.

But what should we do about humans? Many Australians (citizens and permanent residents) had lived in the UK for a substantial period between 1980 and 1996, and some, possibly many, might be incubating the disease. Estimations of the future size of the vCJD epidemic in the UK were very imprecise, ranging from a few hundred cases to hundreds of thousands. By our calculations we could expect about one per cent of the number of UK cases, so the size of the UK epidemic was extremely important.

With all this uncertainty there arose the issue of the safety of the blood supply. Could vCJD be transmitted by transfusion, and if so, what should we do about it?

The process of coming to a decision about deferring donors who might possibly, just possibly, be carrying the vCJD prion in their blood was fraught, because there wasn't an established process to be followed. Eventually, the experimental demonstration in the UK that the BSE prion could be transferred from one healthy sheep to another by transfusion and produce disease in the recipient, decided the issue. Health ministers agreed to defer blood donors who had lived in the UK for a cumulative period of six months or more between 1980 and 1996.

This decision was clearly an exercising of the 'precautionary principle', not one which depended on a careful analysis of cost-effectiveness. It did cost money e.g. in the recruitment of new donors, and the blood supply might have been potentially at risk from an inadequate number of donations. In the event, that did not prove to be the case, and the decision to defer donors received wide support.

We then set up an independent, multi-discipline, expert committee under the aegis of NHMRC to advise government on a wide range of risk-management issues concerning BSE and vCJD. Further decisions about blood, foods, therapeutic goods, cosmetics etc., were then taken in a sounder and more measured way. All this activity was as a result of a potential, unquantifiable threat.

One other important principle we tried to bear in mind was the importance of keeping the public properly and sensibly informed. The authorities in the UK in the 1980s did not understand that and the result was an enormous loss of confidence in government and those in authority who claim to know best. The vCJD epidemic in the UK may have peaked at 150 or fewer cases which means we will probably see only a handful of cases in Australia.

### *Smallpox*

In 1980, after a ten year campaign, led by Frank Fenner, along with DA Henderson and Azao Arita, WHO was able to declare the world free of smallpox. But while the natural world was free of the virus, stocks remained in laboratories in the US and the USSR.

The shattering events in New York of 11 September, 2001, and subsequent release of the anthrax bacillus, brought the issue of terrorism and bioterrorism into very sharp focus. It wasn't too large a step for authorities to wonder what might be in store with the release of other biological agents, including smallpox. There had been concerns that the smallpox virus might have got into the wrong hands, and the Centre for Disease Control and Prevention in Atlanta put smallpox into its category A of potential bioterrorism agents.

*I suspect a major problem for the future will be to keep the right state of alertness amongst health professionals and governments as the months and years go by.*

What should Australia do to prepare against a possible smallpox attack? We had no vaccine, and we had to assume that the population was for the most part non-immune.

On this occasion we were quicker to bring together an expert group on smallpox, and were extremely fortunate to have an outstanding expert in Frank Fenner. It was agreed at once that we needed to get vaccine on shore, and that has happened. There is still considerable debate, however, here and overseas, on a number of other questions:

- How much vaccine is needed—in our case for a population of twenty million?
- How many people, and who, should be vaccinated ahead of any release of smallpox anywhere in the world?
- What is needed to counter the side effects of the vaccine?
- Will any anti-viral drugs be effective against smallpox?
- What education and information is needed for health professionals and the public?
- How would an outbreak here be best managed?

Many of the same considerations which applied to the management of mad cow disease apply here. For example,

reducing the risk of harm from a smallpox attack to an acceptable degree, even though that risk seems remote and unquantifiable, will be expensive, but some action has to be taken to maintain public confidence and to attempt to forestall the devastating effects of a release of the virus. Again, a critical part of managing risk is communication with the public, trying to strike a balance by allaying unreasoning fear with proper information.

Smallpox is still a sword of Damocles hanging over us, but how thin is the thread holding the sword is anybody's guess. I suspect a major problem for the future will be to keep the right state of alertness amongst health professionals and governments as the months and years go by.

### *Severe acute respiratory syndrome (SARS)*

The story of SARS is both fascinating and instructive. In late 2002 a mysterious respiratory illness appeared in Guangdong province in southern China, a predominantly rural area of 75 million people, with a subtropical climate and a rainfall of two metres each year. It is a region with humans and animals in close juxtaposition.

In February 2003 this disease came to international notice. A physician from Guangdong province fell ill while staying at the Hotel Metropole in Hong Kong, and twelve other guests became infected. Those guests carried the infection to Vietnam, Singapore, and Canada where local outbreaks and chains of transmission followed. On 13 March WHO issued a global alert.

*What happened in Vietnam was in many senses an object lesson to all of us in how to respond to a public health emergency.*

What happened in Vietnam was in many senses an object lesson to all of us in how to respond to a public health emergency. Late in February, a patient presented to the Vietnam French Hospital with an odd 'flu like illness. Hospital officials were worried that this might be a new influenza virus, and sought help from the local WHO office.

Dr Carlo Urbani answered the call, and quickly realised that this was something unusual and potentially very worrying. What was on everyone's mind at first, of course, was: is this the 'big one', the next pandemic strain of influenza? Dr Urbani stayed working at the hospital, gathering data, sending samples for testing, instituting rigorous infection control, helping allay fear when it became clear that this wasn't influenza, but a new virus, highly contagious and virulent. Tragically, within a few weeks Dr Urbani and five other healthcare workers were dead. To protect their families and the community at large, many of those caring for the patients quarantined themselves in the hospital, a selfless act which put them at considerable risk.

Dr Urbani had such standing locally, that when WHO met with the vice-minister of health in Vietnam in early March, the government immediately isolated the French Hospital, instituted new infection controls in other hospitals, and openly sought international help.

By its prompt and open actions, Vietnam brought its outbreak to a halt with only sixty-odd cases in total and a handful of deaths. Of those sixty cases half were healthcare workers, infected when nobody knew what they were dealing with. We owe a debt to Dr Urbani and Vietnam for alerting the world so promptly to this new public health threat.

Hong Kong was not so fortunate and they suffered well over 1500 cases and 150 deaths. In contrast to Vietnam, government authorities were less open with the community and it took time for the appropriate public health measures to be instigated. This government's approach seemed to be to play everything down in order to 'protect the economy'. It is hard to escape the

conclusion that this attitude exacerbated rather than helped ameliorate a very difficult situation.

The international response to SARS was outstanding. Within weeks of the WHO alert, public health experts and scientists from all over the world had collaborated to isolate the virus, determine its gene sequence, and develop diagnostic tests and well-targeted disease control measures. This was an amazing harnessing of the world's talent to produce unprecedented results.

And what about Australia? How did we fare?

We were brilliantly lucky. We had Australian experts early on in Beijing, Hanoi, Geneva, Singapore, Hong Kong and Manila, so we were very well informed about developments. Our experts from around the country pooled their knowledge to develop locally validated diagnostic tests, and the research dollars needed were provided by NHMRC. Increased border surveillance was instituted, and advice on stringent infection control went out to hospitals. Information was made available to health professionals and the public, particularly international travellers.

We had a small number of putative cases of SARS in Australia, and even these stretched the resources of the hospitals caring for them. In this event we ended up with only one proven SARS case.

*The central dilemma is that we don't know when the next pandemic will be upon us, and we are not really in a position to accumulate and store indefinitely enough antiviral drugs to protect the population.*

We were indeed lucky, and I hope we have learned a number of lessons—chiefly, the need for more rigorous infection control procedures in hospitals. In Hong Kong, health care professionals were dying even after they knew they were dealing with a highly contagious, virulent organism. It seems that they were being infected because of minor slips or lapses in procedure e.g. touching the face or spectacles with a contaminated hand.

The world was lucky that SARS did not prove to be as highly communicable as influenza. It didn't sweep across the world infecting millions as in past influenza pandemics. For the most part it appeared in tight clusters around very sick patients—'super-spreaders' as they were called—involving those who had had close contact. The total number of cases worldwide was less than 10 000, the deaths less than 1000.

Why, then, did SARS cause such disruption to the economies of so many countries?

I don't know but will venture a couple of comments. In Australia and most of the western world we live in a risk-averse society. Information travels fast, and anxiety is readily generated and spread. Fear of contagion has always been part of the human condition, and in recent decades this has been thrown into sharper relief by our relative freedom from infectious disease. So when SARS appeared, a mystery virus, killing the very people—doctors and nurses—who should have been able to protect themselves, spreading to numerous countries seemingly overnight, it's perhaps not surprising that there was a substantial reaction.

The SARS epidemic subsided almost as quickly as it appeared. It was over in July; the chains of transmission had been broken. Will we see it again, or will it return to the animal world whence it came? Scientific opinion seems divided. My guess is that it may well join influenza as something that returns in due season, but if that proves true I hope it will be seen as a known and understood enemy which can be effectively countered.

## Influenza

Finally, a word on influenza. When will the next pandemic appear, and what can we do about it? The central dilemma is that we don't know when the next pandemic will be upon us, and we are not really in a position to accumulate and store indefinitely enough antiviral drugs to protect the population. It will probably take four to six months to develop a new vaccine after the new strain of virus is characterised, and further time to manufacture and distribute it. Well before then the first wave of infection will have hit Australia, even if the origin of the epidemic is in the northern hemisphere.

We have national and state influenza pandemic plans, and an expert group is looking at all the options for a co-ordinated public health response. Just how effective our response can be remains to be seen.

## Conclusion

We are fortunate in this country. We have the human skills and technical resources to keep communicable disease at bay. But we should be under no illusion that it will take vigilance of the highest order, good planning and prompt action to ensure an effective response to future hazards, whether from new diseases, re-emerging diseases, or the malevolent release of biological agents. Let us hope that our luck continues.

*Richard Smallwood is an Emeritus Professor of Medicine with the University of Melbourne. In November 1999 he was seconded to Canberra as Commonwealth chief medical officer until June 2003.*

## UNIVERSITY OF MELBOURNE MEDICAL SOCIETY

The 2004 UMMS lecture will be held in late October/early November. This year's AGM will also be held at this time, to coincide with the society's annual function for members. Full details of the date and speaker will be included in our October issue of *Melbourne PostCard*. Details will also be posted on our website as soon as they are available.

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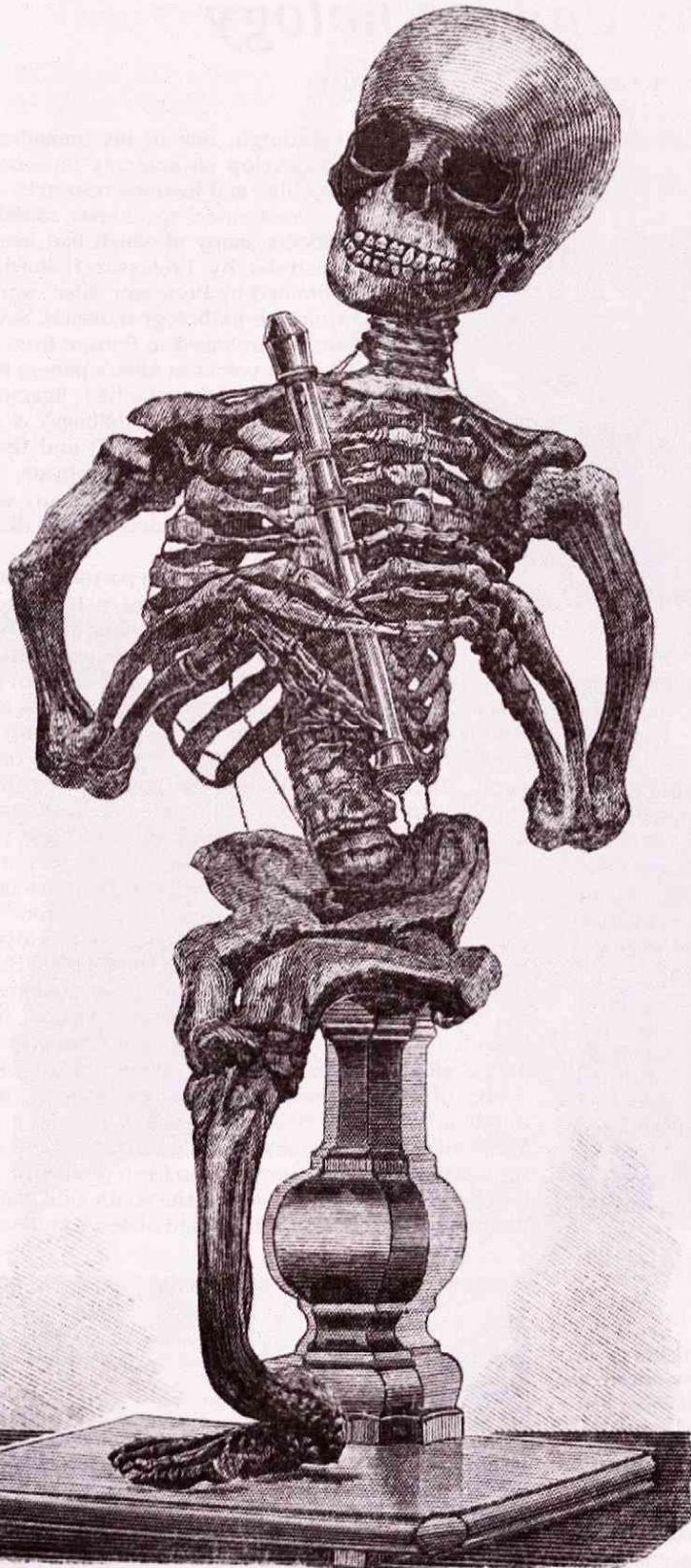
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## On a Remarkable Symmetrically Deformed Skeleton

BY GEORGE B HALFORD, MD

PROFESSOR OF ANATOMY,  
PHYSIOLOGY, AND PATHOLOGY,  
IN THE UNIVERSITY OF MELBOURNE.  
24 SEPTEMBER, 1868



REMARKABLE SYMMETRICALLY DEFORMED SKELETON.

*Engraved from a Photograph.*

This remarkably deformed skeleton is the property of the Melbourne University. It was purchased for me at Paris in 1862, by Messrs. Raginal and Co., and is stated to have been prepared by the late Dr Sue. The being, whose skeleton is here represented, with pipe in hand, is said to have played the instrument on the steps of one of the churches in Paris, and to have attained the age of twenty-eight years. Further than this, I have not been able to obtain any information.

The height of the skeleton as it now rests is two feet six and a-half inches. The general deformity is that resulting from rickets of childhood, from which recovery had occurred as seen in the hardness of the bones. The compressed thorax, curved spine, diminutive pelvis and curved extremities are all sufficient evidence of this. The peculiar deformity, however, consists in the symmetrically blending of the lower ends of the two thigh-bones, which are supported by one leg so as to form one knee-joint only; this being, however, placed directly in a line with the promontory of the sacrum, or if the upright position were assumed immediately beneath the centre of gravity of the trunk. It is evident, therefore, the one foot would, with the assistance of crutches, be an efficient means of support and progression. That this was so, I think, is shown by the forward curve of the tibia and fibula, and by the large muscular impressions on the bowed humeri. It will be seen that the supporting leg and foot correspond to the right of normal skeletons, and on examining the knee-joint from behind, the right femur forms a somewhat larger part of the articulation than the left. In front, however, the patella appears to articulate equally with both.

Short of sawing through and spoiling the preparation, I have examined it as thoroughly as possible, and see no reason to believe it other than a natural deformity, and not an artificially prepared specimen. I can find, however, no record of anything similar, and before leaving England searched the museums for any such specimen, not only in man, but amongst the lower animals. It is certainly remarkable that no former account has been published of this case, as the disposition of the muscular apparatus here would have been very interesting. Perhaps time and opportunity were wanting for the work, or some religious or social scruples prevented it. Much interesting matter relating to deformities in general will be found in Vrolik's 'Tabulæ ad illustrandam embryogenesis hominis et mammalium tam naturalem quam abnormem', which is in the University Library.

# A Large and Efficient Museum of Anatomy and Pathology

BY CHRIS BRIGGS AND DENIS CAHILL

**I**N HIS LETTER to the vice-chancellor and members of the university council, dated 2 December 1882 and accepting his appointment as professor of anatomy and pathology, Harry Brookes Allen wrote: 'One of the final objects which I set before myself is the creation of a large and efficient Museum of Anatomy and Pathology in the Medical School, a small but valuable nucleus being already in place'.

In the 120 or so years since Allen accepted his professorship, the museum of anatomy and pathology at the university was divided into separate collections associated with their individual departments and, at various times, housed in separate buildings. This year, however, the two museums have been amalgamated as the Harry Brookes Allen Museum of Anatomy and Pathology and brought together as an integrated collection.

## The early years

The collection which formed the 'small but valuable nucleus' of the museum had been started in 1859 when the then new vice-chancellor, AC Brownless, wrote to inform the secretary of the Melbourne Hospital that the University of Melbourne council wished to form a museum of anatomical, pathological, physiological and botanical specimens. The council also allocated the sum of £500 '... for the purchase of medical books for the University Library and/or Anatomical, Physiological and Pathological preparations as a nucleus for the Museum ...' This money was forwarded to the Victorian agent general in London and used by George Britton Halford to purchase £300 worth of books and £200 worth of preparations for the museum.

One of these preparations is still on display in the Harry Brookes Allen Museum of Anatomy and Pathology: the remarkable, symmetrically deformed skeleton prepared by Dr Sue and purchased in Paris for Halford by Messrs Raginal and Company in 1862. (see p.49)

Halford was not the only one who provided the material used to establish the foundations of the Harry Brookes Allen Museum. Two small collections of specimens were also transferred from the Melbourne Hospital to the University of Melbourne, in 1861 and in 1885.

## A parting of the ways

### The anatomy collection

In 1906, with the arrival in Melbourne of Richard Berry as professor of anatomy, plans for a stand-alone anatomy museum were developed, allowing Allen to concentrate his energies on pathology and in building up the pathology museum. Unfortunately, the anatomy department that Berry inherited was run-down and extremely under-resourced. Receiving reports from two graduates, George Rennie and Colin MacKenzie, who were both to play a part in the future development of the department, Berry was dismayed to find a lack of basic teaching resources. He wrote: 'It contained literally nothing, not even a skeleton, though later I discovered quite a lot in the cupboard. There were no diagrams, models, osteological specimens, dissected parts for study, lantern slides, microscopes, no books, no anything, not even a room for the professor to sit in!' Berry immediately set about injecting life into this somewhat moribund department and, based on his experiences in



HARRY BROOKES ALLEN C1880

Edinburgh, one of his immediate tasks was to develop an anatomy museum as a major teaching and learning resource.

Anatomical specimens, skeletons and wax models, many of which had been brought to Australia by Professor Halford, and others obtained by Professor Allen, were transferred from the pathology museum. Several of these were purchased in Europe from Tramonds of Paris. Invoices in Allen's papers itemise a male skeleton with attached ligaments (costing 200 francs or \$8/5 shillings), a model of the lymphatic system (\$14) and the skeleton of a child displaying epiphyses (600 francs/£25). The skeletons and many of the original Tramond wax models are still displayed in the museum today.

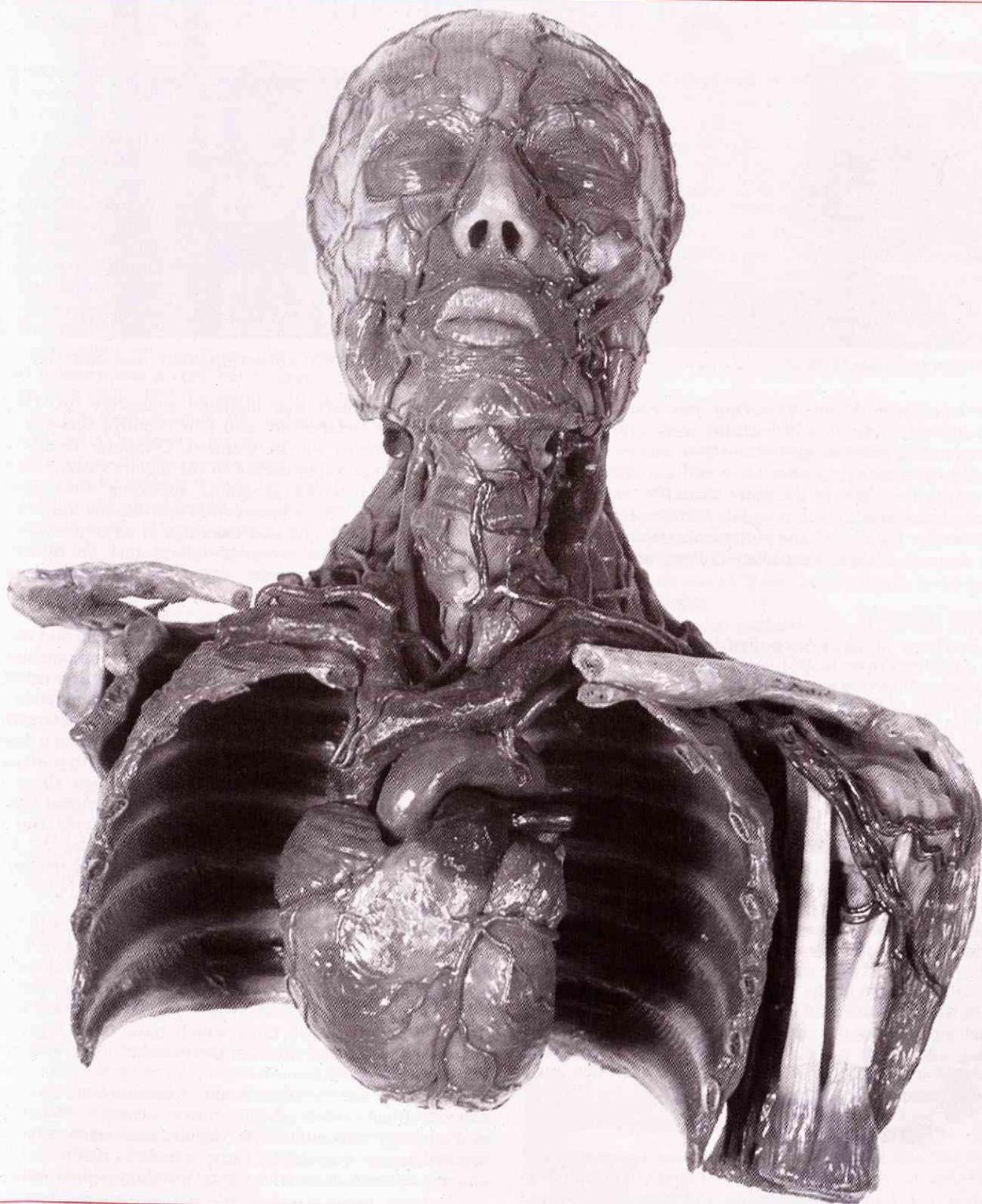
The anatomy department had instituted a donor body program in 1898 and in the early years additional bodies may also have been received from the Benevolent Asylum and

Hospital for the Aged and Infirm, as well as from the coroner's office. Storage facilities and preparation areas for dissection were located at the eastern end of the anatomy building and a private room was set aside for prosectors on the second floor. These were honorary positions, established by Berry and offered to the best second year medical students, whose duties included anatomy demonstrations to first year students. During their tenure, prosectors were also to prepare at least one dissection suitable to be displayed in the museum, as well as specimens for teaching purposes. The prosectors' board, listing prosectors from 1906, is now located in the foyer leading to the new museum on level three of the Medical Building. When the new problem-based learning program commenced in 1999, the position of 'Prosector in Anatomy' lapsed, however, it is intended to institute a new prize that honours the top students across all disciplines taught over semesters two to five.

In 1923, again under Berry's guidance, a new anatomy building, the Richard Berry Building, currently occupied by Mathematics and Statistics, was constructed and subsequently the anatomy museum moved into fresh premises. This museum had floor-to-ceiling windows on the south side and a mezzanine floor from which the curator could observe students.



THE FIRST ANATOMY MUSEUM FOLLOWING ITS COMPLETION IN 1908. THE MUSEUM WAS LOCATED IN THE NORTH WING OF THE THEN MEDICAL BUILDING (NOW DAME ELISABETH MURDOCH BUILDING).



WAX MODEL DISPLAYING THE SUPERFICIAL BLOOD SUPPLY TO THE NECK AND HEAD. THE FRAMEWORK FOR THE MODEL CONSISTS OF REAL BONE ON WHICH THE WAX WAS APPLIED IN LAYERS. COTTON WOOL WAS USED TO PROVIDE SHAPE TO THE UNDERLYING STRUCTURES. THE MODEL WAS PURCHASED FROM TRAMONDS OF PARIS, PROBABLY IN THE MID- TO LATE-NINETEENTH CENTURY.

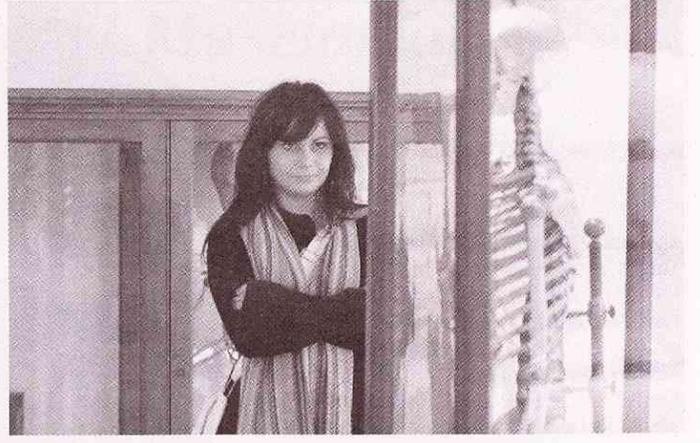
Berry instituted a vigorous program of specimen preparation and the museum today contains many pots dating back to his time. Berry must have participated in this program and left several pots bearing his name, including a series of sagittal sections of brains and sections of the trunk, one displaying a late-term pregnant woman. In 1929 Berry returned to the United Kingdom and was succeeded by Frederick Wood-Jones, a charismatic fellow with an outstanding reputation as a comparative anatomist (Darien-Smith 1996). He made many contributions to the museum, including a display detailing the

comparative anatomy of the skeleton which has been exhibited for many years. Kenneth Russell, Stewart lecturer in anatomy before the Second World War, became curator of the anatomy museum on his return from active service until his retirement from the department in 1976. Dr Geoff Kenny succeeded Professor Russell and was curator until he too retired in 1991.

The period from 1950 to 1970, coinciding in part with Sir Sydney Sunderland's time as professor of anatomy (from 1937 to 1961) and dean of medicine (1953 to 1971), saw a large number of fine dissections prepared and potted. Perspex



STUDENTS ENJOY USING THE NEW FACILITIES PROVIDED BY THE HARRY BROOKES ALLEN MUSEUM OF ANATOMY AND PATHOLOGY. Photos, Michael Silver



containers were introduced, replacing the old cylindrical glass jars, and many detailed dissections were produced and displayed, including arterial casts of the liver, kidney and heart plus examples of anatomical anomalies and variations. These dissections form the basis of the more than 700 specimens in the anatomical museum collection today. More recent additions have included the transfer of the entire collection of pots and specimens from the Royal Australian College of Surgeons in the 1990s.

#### *The pathology collection*

When Sir Harry Brookes Allen died in 1924, the pathology collection contained over 12 000 specimens. However, interest in the pathology collection started to decline after Allen's death, despite the efforts of RD Wright in the mid-nineteen thirties, AW Pound in 1949 and GS Christie in 1951 to expand and maintain the collection.

During the professorship of ESJ King a concerted effort was made to revitalise the pathology museum and Drs JHW Birrell and CR Green added new material to the collection. New lighting was installed and by 1959 the entire collection, with the exception of a small number of specimens retained for historical purposes, was remounted in perspex containers.

In 1968 the current tri-radiate Medical Building, housing the departments of anatomy, pathology and physiology, was completed. The anatomy museum was moved to the east wing of the building and pathology re-established its museum in the west wing, bringing the two collections under the one roof for the first time since the turn of the century. The then professor and chairman of the Department of Pathology, GS Christie, knew and appreciated the value of the pathology collection as a resource for teaching and under his direction new display cases were purchased and a major part of the collection was once again remounted in perspex containers.

#### **Achieving Sir Harry's goal**

In late 2002 the faculty made the decision to amalgamate the two museums and early this year building commenced on level three of the east wing. Plans for the new amalgamated museum also required renovating a nearby laboratory, which, when combined with the existing anatomy museum, provides approximately 550 square metres of floor space. The Harry Brookes Allen Museum of Anatomy and Pathology was opened by Professor David Penington on 26 April this year. The new museum features displays of general anatomy, pathology and radiology and includes exhibits of some of the interesting historical materials collected by the two departments over the last 150 years. The collection will rotate according to the phases of the medical and health sciences teaching programs. In the first half of the year exhibits will support teaching in semesters one, three and five of the medical course (Principles of Biomedical Science, Cardiorespiratory and Locomotor Systems and Body Defence Systems) while in the second half

of the year exhibits that highlight semesters two (Nutrition, Digestion and Metabolism) and four (Control Systems, Growth and Development) will be featured. Computer terminals have been installed allowing access to the faculty's expanding series of interactive teaching programs, including *An@tomedia* and *Patient Under the Microscope*, as well as to an electronic database of labelled photographs and drawings of all potted specimens, which in time will be accessible off-campus. Ms Rita Bruns, a Melbourne science graduate, is curator of the new museum and has been working on the displays and exhibits since her appointment in 2003.

The Harry Brookes Allen Museum of Anatomy and Pathology is open not just to medical and health sciences students affiliated with the university, but also to students from other institutions, to health practitioners and to those in the community with a general interest in the basic medical sciences. For some time the faculty has appreciated that understanding the human body is no longer solely of interest just to medical and health professionals, and that many people are enthusiastic to learn about human anatomy and pathology. On the university's annual Open Day, the anatomy museum has overflowed with family and friends of prospective and current students, all viewing the teaching specimens and with a desire to know more. More recently, large numbers of organised school groups have visited to expand their knowledge of human structure and function.

At a time when many universities around the world have lost their museum collections due to competition for space, or have had them dispersed or disposed of, the University of Melbourne has recognised the important role a thriving museum can provide in the scheme of independent learning. This venture will bring together the two collections which have been separated for nearly 100 years, and honours the founder of the first museum, Sir Harry Brookes Allen.

The merger of the Department of Anatomy and Cell Biology's collection with that of the Harry Brookes Allen Museum of Pathology will endow the faculty and university with an invaluable resource and Sir Harry's goal of creating 'a large and efficient museum of Anatomy and Pathology' will be achieved.

*Chris Briggs is an associate professor in the Department of Anatomy and Cell Biology. Denis Cahill recently retired from his position of laboratory manager after forty-four years with the Department of Pathology*

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- Photographs and reference sources provided by Stuart Thyer, Department of Anatomy and Cell Biology

## THE ILLS THAT FLESH IS HEIR TO

MARK TWAIN ONCE quipped that although historical events never quite repeat themselves, they often seem to rhyme. Having spent some time investigating the history of hereditarian thought, it has become clear to me that in this case Twain's analysis is perfectly apt. One might imagine the concept of hereditary disease to be an innovation born of modern molecular analysis and biostatistics. It is, however, of very ancient provenance. In the 1700s and 1800s, in particular, it fascinated and troubled doctors and patients alike. And their responses to the perceived threat of 'spoiled heredity' offers us a not-so-distant mirror to some very modern concerns. Here I wish to give a small flavour of a period no less obsessed with hereditary malady than our own.

The heritability of conditions like consumption, scrofula, gout and insanity was a core belief among medical writers of the 1700s and 1800s. But the popularity of the idea extended well beyond the medical elites. We find detailed discussions of hereditary 'taints' in poetry, novels and plays, diaries, letters and court records. Charles Darwin, perhaps understandably, had plenty to say on the subject. In 1862 he wrote to a friend blaming himself for the chronic ill health that gripped his offspring. 'We are a wretched family,' Darwin grimly concluded, 'and ought to be exterminated'. The staunch anti-evolutionist Robert FitzRoy, Darwin's captain on HMS Beagle, was himself haunted by the fear of 'becoming deranged' due to having inherited the morbid tendencies that had driven his uncle, Lord Castlereagh, to take his own life. Even Queen Victoria was believed to carry the seeds of heritable madness: Prince Albert was said to live 'in perpetual dread of bringing on the "hereditary malady"' in his wife.

The heritability of gout was so widely accepted that by the late 1700s the gouty diathesis had become a primary cultural motif for notions of tradition and pedigree. Descending among the sons of the sedentary and indulgent upper classes almost as surely as their titles and crests, this 'patrician's malady' seemed to be a peculiarly aristocratic affliction. Proud of their status, many noble families took consolation in asserting that the agonising pain of gout at least distinguished their noble blood from that of the healthier arriviste. 'This is one of the few maladies ... of which men are disposed to be proud', complained one doctor in 1834. More commonly, though, suffering from alleged hereditary disease brought with it profound stigma. And since the category of hereditary disease included such common maladies as consumption, scrofula, insanity and cancer, the lives of many individuals were deeply affected by hereditarian beliefs.

The prospect of bequeathing heritable maladies upon one's offspring loomed large in the imagination of many of our recent forebears. Medical moralists railed against those who married and passed their faults onto new generations. And a fear of marrying into hereditarily tainted families was well entrenched by the late 1700s. Parents often sedulously examined the relatives of their children's suitors for evidence of chronic disease; and after titles, cash and connections, the family's record of health was often the next most serious criterion used when deciding whom their progeny should marry. Best-selling books like Alexander Walker's 1838 *Intermarriage; or the mode in which, and the causes why, beauty, health and intellect result from certain unions, and deformity, disease and insanity from others ...* counselled on how to choose the right partner and the dangers of forming a marital alliance with the hereditarily diseased.

Yet this predilection for invoking heredity arose in an age prior to the rediscovery of Mendel's study of the genetics of sweet peas and well over a century before the recent explosion in our knowledge of genetic risk factors. Indeed, perhaps the most intriguing aspect of this period's obsession with the notion of hereditary malady is that doctors became hooked on the

idea in spite of the considerable ambiguities of their data. The popularity of the concept had relatively little to do with either pedigree data or logical deduction.

The main reason doctors embraced the idea of hereditary disease had to do with the fact that conditions like consumption, scrofula and gout were unresponsive to anything in their pharmacopoeia. They rationalised this by assuming that these afflictions were built into the very hereditary fabric of the sufferer. The predisposition to consumption, scrofula and gout, they said, was as much a part of the individual's essence as their hair colour, temperament and facial shape. Small wonder, then, that the drugs did not work. As the doctor Thomas White put it in 1784: 'To deem [a disease] hereditary was the best apology that ingenuity could devise' for the 'great difficulty of curing those afflicted with it'.

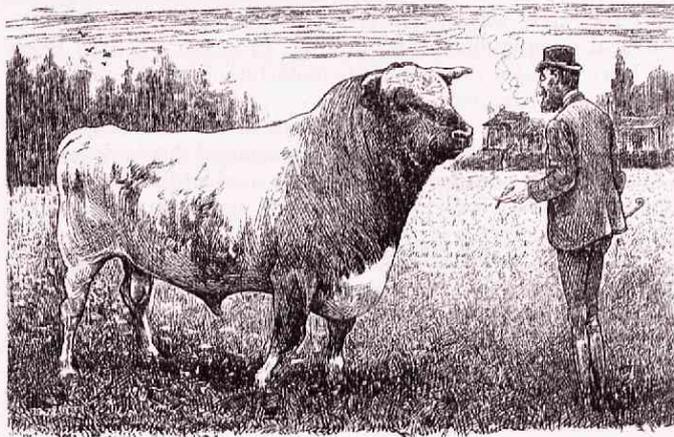
This was a period in which medical theorising could also be influenced by many factors, including the attitudes of powerful social groups and wealthy patients. In particular, as an alternative to contagionism, ideas of hereditary disease suited the interests of manufacturers and merchants, as well as civil libertarians, all hostile to the practice of quarantine. Additionally, most sufferers from tuberculosis preferred to embrace the stigma of having a 'corrupted essence' over a contagionist explanation that might make them into an object of fear among family and friends. It was the lesser of two evils.

Hereditarianism also enabled sufferers to see themselves as hapless victims rather than as culpable for their own ill-health. When an English physician argued in a 1772 work that gout was the result of 'mistaken habits of life' he elicited a storm of protest. Samuel Johnson, his temper worsened by gout, was stung to declare his work 'a good book in general but a foolish one in particular', the errant 'particular' being its denial of gout's heritability. Sufferers like Johnson objected to having to bear moral censure on top of excruciating pain.

The empirical basis for our modern knowledge about hereditary disease is vastly more cogent than any of many rationales underpinning equivalent ideas in the 1700s and 1800s. But the profound concern of many people in earlier times about transmitting hereditary maladies might well give us useful insights into some of the social implications of our fast-growing knowledge of the genetic components of common diseases.

John C Waller

Centre for the Study of Health and Society



HAPPY THOUGHT! LET US ALL HAVE A VOICE IN THE MATTER.  
Noble Breeder of Shorthorns. "Well, you are a Splendid Fellow, and no mistake!"  
Prize Bull. "So would you be, my Lord, if you could only have chosen your Pa and  
Ma as carefully and judiciously as you chose mine!"

PUNCH, 20 MARCH 1880, VOL. 78, P.126

## UNIVERSITY GATEWAYS TO THE HISTORY OF MEDICINE

**N**OBEL LAUREATE AND University of Melbourne medical graduate, Sir Frank Macfarlane Burnet, sought to understand the process by which new knowledge in biomedicine and its associated specialties evolved, became accepted and was refined.

Which individuals, concepts and organisational developments influenced the process and were in turn influenced by it, he wondered? By what means did other factors, such as technological advances, come into play?<sup>1</sup>

Had Sir Macfarlane been alive today, he might well have been chuffed to find his *alma mater* providing ready access to information and images capable of shedding light on this knowledge-building process, particularly in the Australian and Melbourne contexts.

Professor Janet McCalman, director of the Johnstone-Need Unit for the History of Medicine, provided the vision for the Gateways to the History of Medicine and the Health Sciences project, and its use of that most popular vehicle for mass communication, the world wide web.

Her vision was realised with the help of the Australian Science and Technology Heritage Centre (Austehc), which provided advanced resource management software for four compelling websites collectively known as Gateways. Austehc, located on campus in the Old Arts Building, is well known for its development of a number of other science-based web resources including Bright Sparcs and Australian Science at Work.

Since its launch last September, a large and diverse group of people has accessed the gateways websites for wide-ranging purposes.

There was, for example, the professor of psychology from another university who explored the gateways historical compendium for references to William Macewen (1848-1924), an exceptional Scots surgeon who pioneered a number of new procedures including intracranial brain surgery. Macewen visited Melbourne in 1923 while he was president of the International Society of Surgery and unveiled the plaque on the then new anatomy building (now known as the Berry Building).

A separate, though somewhat related, inquiry came from a staff member of the university's Department of Anatomy and Cell Biology. He was interested in the possibility, raised in the historical compendium, that in 1923, Professor Richard Berry may have changed the title of his department from 'Anatomy' to 'Anatomy and Histology'.

A former reader in the department of dental medicine and surgery who retired in the late 1980s examined the dental entries in the historical compendium, and provided additional valuable information about key individuals and events in Melbourne's dental history.

Similarly, a former head of the Microbiological Diagnostic Unit, contributed additional details on the department of bacteriology entry, and the circumstances surrounding its re-badging as the 'school of microbiology' in the mid-1960s and the 'department of microbiology and immunology' in the mid-1990s.

A current staff member from the Centre for International Mental Health asked about the feasibility of including publication details of current staff members in the historical compendium entries. She saw this addition as helpful to research students choosing supervisors and to students wanting to assess the centre's research strengths.

A former university staff member who worked with the inaugural professor of pharmacology, Frank Shaw, was



SIR FRANK MACFARLANE BURNET

interested in the latter's entry in the historical compendium. He was able to add some useful information on the close relationship forged in the 1950s between the department of pharmacology and the firm Nicholas, which marketed aspirin in Australia. Funds from this source were used to establish the research facility, Burnham Beeches, in the Dandenongs in the 1960s.

On the instrumentation side, a hospital archivist searched the medical and dental history museum catalogues for details of any blood transfusion equipment held. She subsequently contacted Ann Brothers, curator of the medical history museum, and arranged a loan of relevant material for use in a forthcoming exhibition.

Another search of the catalogues was undertaken by a PhD student at Yale University working on the history of scientific and medical instruments. He followed up with an enquiry about a nineteenth century orthopaedic 'chain saw' bone cutter.

Sir Macfarlane said it was the changes going on all the time that were fascinating—and what better way to track developments in the biomedical knowledge base, the nature of research and the practice of medicine and the allied health sciences in Australia than through Gateways.

Dr Ann Westmore

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- 1 Sir Macfarlane (1899-1985) explored these ideas in his autobiography, *Changing Patterns; An Atypical Autobiography* (1968) using himself as a case study.

**Gateways to the History of Medicine and the Health Sciences at the University of Melbourne** ([www.cshs.unimelb.edu.au/gateways.html](http://www.cshs.unimelb.edu.au/gateways.html)) comprises four websites concerning the history of medicine, dentistry and the health sciences:

- **Historical Compendium of the Faculty of Medicine, Dentistry & Health Sciences** ([www.cshs.unimelb.edu.au/umfm](http://www.cshs.unimelb.edu.au/umfm)) provides information about the history of the faculty, its departments and schools, and about the ideas and people influential in its development. It includes documents, images, maps and links to archives, published materials and other online resources.
- **Gateway to the Johnstone-Need Medical History Unit** ([www.cshs.unimelb.edu.au/jnmhu](http://www.cshs.unimelb.edu.au/jnmhu)) is a guide to research in the history of medicine both within the University of Melbourne and in other Australian collections and archives. It includes a catalogue of rare books, papers and journals in the University of Melbourne library and archives.
- **Online Medical & Dental History Museum Catalogues** ([www.cshs.unimelb.edu.au/mhm](http://www.cshs.unimelb.edu.au/mhm)) details the dental and medical museum collections of the University of Melbourne.
- **Australian Nursing History Project** ([www.nursing.unimelb.edu.au/anhp](http://www.nursing.unimelb.edu.au/anhp)) is being developed as a register of published and unpublished resources for the history of nursing.

## A WEEK TEACHING PSYCHIATRY IN ETHIOPIA

**A**MIDST DOCTORS PERFORMING momentous plastic surgery, immense public health programs and the coordination of refugee camps for hundreds of thousands of people, a week teaching in Ethiopia seems fairly banal. This is certainly true in psychiatry, for some may consider access to mental health expertise in the developing world a luxury—surely famine is more pressing?

Myths about psychiatry often prevent it being considered a priority for poor countries. After all, it seems simultaneously a low priority ('what about the starving children?') and impossibly huge ('but the whole population must be traumatised!'). However, last December I had the delightful, rewarding and humbling experience of teaching psychiatry in Ethiopia.

### The big picture

Western views of mental disorder in developing countries have been twisted by a belief that they are rare and that people in impoverished countries are stoic and resigned to their fate.<sup>1</sup> It is often thought that mental disorder is infrequent. However, the incidence of psychosis is similar worldwide. Depressive and anxiety disorders occur in developing countries at a possibly greater rate than in Western countries, but are far less likely to be diagnosed or receive treatment.<sup>2</sup> Adverse events befalling those living in unstable environments lead to markedly increased rates of post-traumatic stress disorder and anxiety disorders. Also, infectious diseases such as HIV are intrinsically linked to mental disorders including mania and dementia.

The picture is bigger than this: it affects productivity, for people with mental disorders are less likely to work and may require carers, who also consequently cannot work. In developing countries children take over the roles of their mentally disordered parents and thus miss school and future opportunities. The World Health Organisation (WHO) Global Burden of Disease Study shows that depression will soon become the leading cause of disease burden worldwide, trumping malaria, heart disease and various cancers.<sup>3</sup> It is a hidden illness. But the developing world is hidden from the media and the consciousness of wealthy countries.

### Ethiopia

Over half of the 60 million people in Ethiopia are children. It is a landlocked country, with tenuous political stability and a marked dependence upon agriculture and foreign aid to feed its people.<sup>4</sup> Epidemiological studies demonstrate a vast hidden need for psychiatric services.<sup>5</sup> However, Ethiopia has only nine psychiatrists. Australia, one third the size, has over 2500.

Doctors who travel overseas for postgraduate training, frequently remain there, lost to the local population. Outside Addis Ababa (the capital) all psychiatric care is provided by doctors without specialist training, nurses with extra training, and traditional healers. Amanuel Hospital in Addis Ababa is the public hospital that provides tertiary inpatient care to the entire country.

Ethiopia has plans to develop a training program to provide its own workforce in the future. I had the pleasure of teaching the first intake of local doctors to undertake local postgraduate psychiatry training. The seven students had worked for between two and fifteen years in psychiatry. Doctors from the University of Toronto and the University of Illinois at Chicago had provided some earlier training.

### Teaching

We provided exam-oriented teaching to the candidates. This included tuition in multiple choice and extended-matching questions; case presentation skills; essay writing; objective structured clinical examinations; critical appraisal skills; and how to organise journal clubs and grand rounds. We agreed beforehand to teach at a level equivalent to UK and Australian training. This included, among other topics, assessment based upon many drugs unavailable in Ethiopia (atypical antipsychotics,

antidepressants beyond tricyclics), and neuroimaging techniques not available (magnetic resonance imaging, nuclear medicine), as well as mental disorders of little local clinical relevance (Creutzfeldt-Jakob Disease, for example).

It was very clear, however, that the students had excellent clinical skills and substantial factual knowledge. As tutors and examiners, my colleagues—one English and one Ethiopian (both specialist registrars at the Institute of Psychiatry in London)—and I were impressed by the application and understanding of all candidates. We conducted full mock exams at the completion of teaching and expect good outcomes in the real exams.

### Psychiatry

In the developing world, psychiatric patients take years to come to treatment. Psychosocial disability accrues greatly in this time, affecting the patient and their family. It is easily treated with basic and available medications and simple psychosocial interventions. Quality of life is easily improved.

The conditions which come to attention are not dissimilar to those seen in Australia. They include severe psychosis, substance use disorders (alcohol and *khat*, a local stimulant drug which is widely used<sup>6</sup>) and major depression. Length of stay in Amanuel Hospital is less than two months, which is brief and excellent for developing countries. However, there is no community treatment at all to speak of; the family, when available, provides most community intervention and care.

Training local doctors in specialties is straightforward. The community of medical graduates has much in common. Standards in the developing world are often very high. The benefits of teaching flow to the students, and thence to the community. As more doctors are trained, there is much potential for standards of care and availability of services to improve. In the future the local course will be self-sufficient. I am proud to have been involved.

### Acknowledgments

The Melbourne Centre for International Mental Health (CIMH), a WHO collaborating centre, funded part of my trip. The goal of the CIMH, to develop capacity for mental health in low-income countries—through teaching, reaching and policy reform—accorded with my visit. The Mental Health Library at the Royal Melbourne Hospital, Professors Bruce Singh and David Ames, and Ms Claire Agius at Organon, all donated books which have joined the library at Amanuel Hospital. Mostly I am grateful to my colleagues Dr Daniel Fekadu and Dr Charlotte Hanlon, Dr Atalay Alem (training coordinator), and the brave students who have hopes for improved psychiatry in Ethiopia.

Danny Sullivan

Senior Registrar in Neuropsychiatry, Royal Melbourne Hospital

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## Life and Death in the Age of Sail

THE PASSAGE TO AUSTRALIA

BY ROBIN HAINES

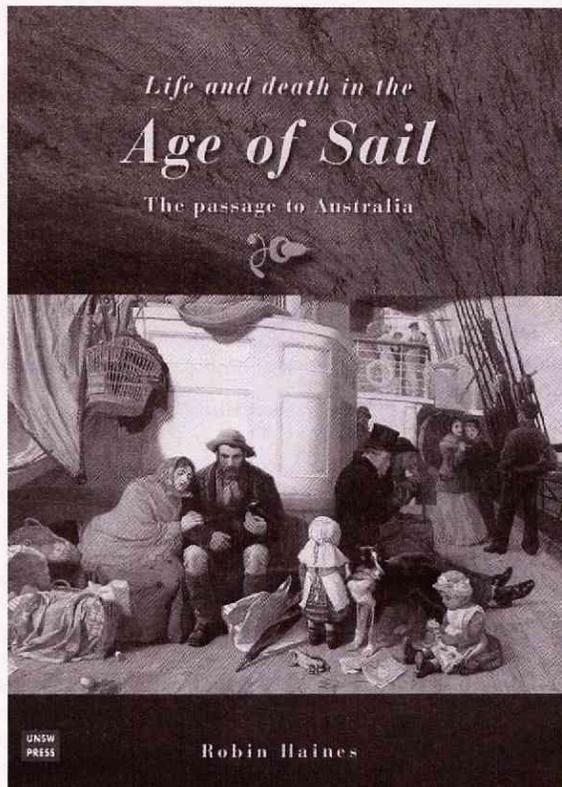
UNSW Press, 2003

Hbk, pp 368, abbreviations, illustrated, endnotes, bibliography, index, rrp \$49.95

THE POPULAR MYTHOLOGY of transoceanic migration is replete with coffin ships going to the bottom at the first hint of inclement weather, hideous overcrowding in the steerage compartments, and rampant fever epidemics. One thinks of the slave ships in which hundreds of thousands of captured Africans were confined to berths five feet long by sixteen inches wide, vessels which reeked so foully they would be anchored several miles from their destinations in the Americas and the slaves rowed to shore. But as Robin Haines stresses in this fascinating book, the government-chartered ships that carried immigrants to Australia during the 1800s were far less notable for either barbarism or mortality.

The long journey south was, of course, no light undertaking. The tropics with their intense heat and the southern oceans, notoriously prone to violent squalls, seemed to flaunt their distant latitude and induced in many sickness, misery and terrible anxiety. Yet, for all the tragedies, discomforts and fears involved, Haines reveals that from the 1830s onwards shipboard surgeons and the government's Emigration Commission achieved something truly remarkable: a decline in the mortality rate on Australia-bound vessels that British towns and cities would fail to achieve until the close of the nineteenth-century. The mortality transition of the late Victorian period, when the classic diseases of filth and overcrowding finally fell into abeyance, occurred on ships bound for the antipodes decades earlier than on land. The only age groups not to benefit were neonates and infants. Bouts of diarrhoea, measles, scarlet fever and marasmus carried off thousands; two-thirds of the deaths on emigrant ships during the 1800s were of children under four.

But *Life and Death in the Age of Sail* is at least as much about survival as death. For while government and ratepayers back home resisted calls for large-scale sanitary reform, despite increasingly squalid urban conditions, aboard Australia-bound ships prodigious efforts were made to prevent the outbreak of disease. Deaths on board represented a loss of manpower to the colonies, a waste of money to the British government and were liable to generate bad press at home and in Australia. Largely for these reasons, a raft of precautions was taken to promote the health of immigrants. The successes and failures of individual ship's surgeons were also closely scrutinised by colonial authorities and by the Emigration Commission. The official logs the surgeons compiled are a wonderful resource for the historian of health and migration. Haines draws on these logs and numerous other documents and reports, and describes the medical regimes under which passengers lived.



Routine fumigation, disinfecting, whitewashing and deck scrubbing helped stave off disease. Passengers were encouraged to keep clean, active and occupied, and efforts were made to serve meals that would shore up the weakest constitutions. Hard ships' tack was often generously supplemented with salted pork, plum pudding and fresh meat from animals slaughtered en route, and many passengers claimed they had never been healthier than on their arrival in Australia.

The result was that ninety-eight per cent of assisted immigrants reached Australian shores alive between 1848 and 1885, and ninety-nine per cent from the 1860s. As Haines comments, this was a 'superlative achievement in the age of sail'. But, just as with the mortality transition on land, the declining death rate had everything to do with improved hygiene and nutrition and virtually nothing to do with the contents of the surgeon's medical toolkit. The key to ensuring the safe arrival of immigrants to Australian shores was rigorous housekeeping and strict management.

Nineteenth-century notions of disease causation often conflated morality and health and the ships' surgeons saw it as part of their duty to safeguard the morals of their wards. Crowded emigrant ships afforded little privacy and passengers found themselves under intense surveillance. In such an environment, senior crew members could assume a paternalistic authority, looking out for the moral and bodily welfare of passengers while severely punishing transgressions. Surgeons placed considerable reliance on volunteer helpers: constables and matrons who assisted them in their daily duties and helped preserve order among the passengers. In many cases, passengers themselves helped to maintain codes of acceptable behaviour.

Haines' descriptions of the mortality profiles, medical precautions and the exercise of authority aboard emigrant ships set the scene for this book's primary aim: to make audible the experiences of the passengers who made the decision to emigrate to Australia. Hence, the latter two-thirds of the book are much more qualitative in approach. Dozens of immigrants wrote letters home or kept diaries describing the 100 or so days spent at sea. Haines relates their stories with a keen eye for telling detail and with considerable sympathy. She recounts the hardships of expectant mothers and the not-infrequent deaths of their babies following birth. Quoting extensively from original sources, she provides a rich sense of the contrasting outlooks of different passengers and describes dozens of scandals, large and small, on which people commented, not least the tragic case of a young woman who gave birth out of wedlock and, spurned by her family, followed her newborn to the grave not long after giving birth.

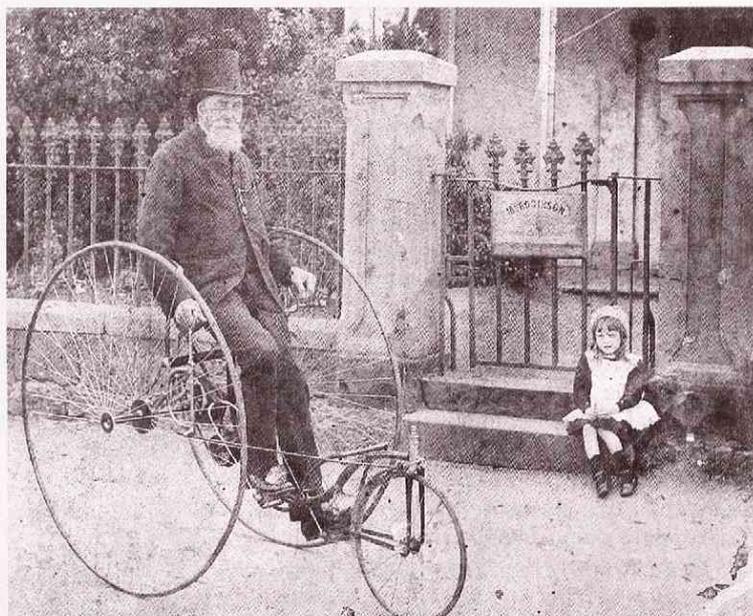
There are also the familiar strains of passengers prostrate with sea sickness, terrified at violent seas, bored and frustrated in the later stages of the passage, but always following the rituals of hygiene, and caring for sick relatives. One is struck by how quickly passengers recreated a semblance of the world they had left behind: with concerts, dances and schools rapidly springing up, and at how fast attentions became fastened on the habits and shortcomings of their fellow passengers. Although

the book's narrative is, above all, concerned with sickness, death and infant mortality, it does a fine job of recreating the daily activities and preoccupations of the immigrants. Where possible, Haines also describes the fates of the immigrants' struggles to adapt to a new climate, culture and way of life. Many corresponded to relations back home and their letters, usually full of eccentric spellings, were often touchingly candid and, on occasion, beautifully written.

These human stories are evocative and extremely well recounted. They contrast quite sharply with the more quantitative opening sections. But the book certainly benefits from having the personal accounts of individual travellers placed in a broader historical and epidemiological context: the two approaches are complementary. The overall result is a powerful, authoritative, superbly researched and highly readable work that will be valued by anyone with an interest in the European peopling of Australia.

John C Waller

Centre for the Study of Health and Society



DR ROBINSON OF GEELONG TAKES TO THE ROAD.  
Reproduced with kind permission of the Geelong Heritage Centre.

## Australian Medical Pioneers Index

STATE LIBRARY OF VICTORIA

[www.medicalpioneers.com](http://www.medicalpioneers.com)

**B**EFORE AUSTRALIA BEGAN to produce its own medical graduates, it was supplied with doctors from Britain and elsewhere. Several thousand doctors came to Australia as immigrants in colonial times. Some were prominent, whose lives are well documented, but most are relatively obscure. They come to our attention as the surgeons on incoming ships, as the medical staff of our first hospitals, as the authors of papers in the old medical journals, as the occupants of the numerous official medical posts of colonial times, and in many other ways. Often they are little more than names on shipping lists or medical registers, and are otherwise unknown.

To meet the need for information about these early doctors, the State Library of Victoria published the Australian Medical Pioneers Index (AMPI) in April 2003. The AMPI is an online biographical dictionary of colonial doctors, originally compiled by David Richards (1937-98) of Nottingham, England, using thousands of index cards. Richards was an epidemiologist and social historian, whose interest in Australian medical history resulted in a series of papers on aspects of colonial medical migration. In 2000 the present editor took on the work of computerising the original card file.

The index aims to hold data on every Australian doctor up to 1875. It includes doctors who had qualified and *were resident in Australia* before 1875 and doctors who were qualified *and had some significant contact with Australia* before 1875. In this second category are numerous ships' surgeons, as well as doctors on scientific expeditions to Australia, on naval vessels in Australian waters and in military units stationed here. In the past, it has been difficult for researchers to obtain information about doctors in these groups, because they usually do not appear in standard sources, such as medical registers and trade directories.

The index has revealed new information about members of these groups both collectively and individually. For example, we now have data on the qualifications and ages of hundreds of ships' surgeons. In addition, AMPI data show that this group included a number of doctors who served professionally on emigrant ships and convict transports over relatively long periods. Such were the remarkable Osborne brothers, James, John and Alick, who made at least seventeen voyages to Australia as ships' surgeons between 1825 and 1838. AMPI now contains information on voyages completed by over a thousand of Australia's early doctors.

Because of its database format, AMPI has the potential to assist with research into what might be called the epidemiological aspect of colonial medical history. This includes a number of areas of potential interest to medical historians, such as the places of origin of medical immigrants, their destinations (geographical and professional) and their qualifications. David Richards, himself a social historian, had this in mind when compiling the original card file.

The index is also of interest to researchers in other fields. The family historian may come across a doctor in the family tree and the local historian often needs to know about doctors who were prominent in a town or district. The latter often include doctors in other roles, such as pastoralists, magistrates, coroners, parliamentarians and others. Since going online, we have received numerous contributions from family and local historians, who often have information which complements the data already recorded in the index from medical registers and similar sources.

The kind of collaboration made possible by the website can be seen in the record for Charles Howard Clarkson, LRCP (1841-94). From searching in official records, we knew that Clarkson was registered in Victoria in 1865, that he was in practice in Hay, NSW in 1867, and that he was later health officer at Port Phillip Heads (about 1870). Then we had a gap until 1875, when his address in the Medical Register was Lancefield, Victoria. After the website went online, a descendant contacted us with more information about him. Between 1870 and 1874 he had been in Fiji, where he was Minister for Trade and Finance. Born in Surat, India, he had graduated in Edinburgh, and then emigrated from London to Melbourne. He was married twice. In 1884 he was appointed superintendent of the Polynesian Hospital in Mackay, Queensland. Later he went to New Guinea, and published an anonymous book about the exploration of that country.

The AMPI is now starting to collect images, especially portraits of pioneer doctors. A good example is the accompanying photograph of the old Geelong doctor Sidney Rudge Robinson (1816-98). We are currently seeking the assistance of archivists and family historians for this phase of the project.

Stephen Due,  
AMPI Editor

## DR DUNBAR HOOPER AND ANTISEPTIC MIDWIFERY

ON 6 JULY 1887 Dr John Dunbar Hooper read a paper to the Medical Society of Victoria. He had just completed his residency at the Women's Hospital and commenced what was to be a distinguished career as an obstetrician and gynaecologist. He was quick to assure his audience that the opinions expressed in the paper were entirely his own, and in no way reflected those of the honorary staff at the hospital.

He had assumed responsibility for the daily running of the midwifery wards at a terrible time. Since 1883 the hospital had been in the grip of what can only be described as an epidemic of infection in both the surgical and midwifery wards. The hospital that had relied upon isolation to control infection was now confining three times the number of women it was designed to accommodate. The nurses were distracted, the place often untidy, the earth closets noisome, the hospital's cesspit full of blood and decomposing placentae.

The medical and daily press called it for the scandal it was. The hospital was periodically closed and the patients confined at its expense in the homes of trusted local midwives, but still the mothers died. Staff suffered septic wounds from splinters; two women contracted infections from an honorary using a uterine sound; women died after small routine operations.

Hooper commenced duty as infirmary resident doctor in 1885, but when the senior resident's health broke down under the strain of the midwifery wards, he assumed responsibility for both 'sides' of the hospital.

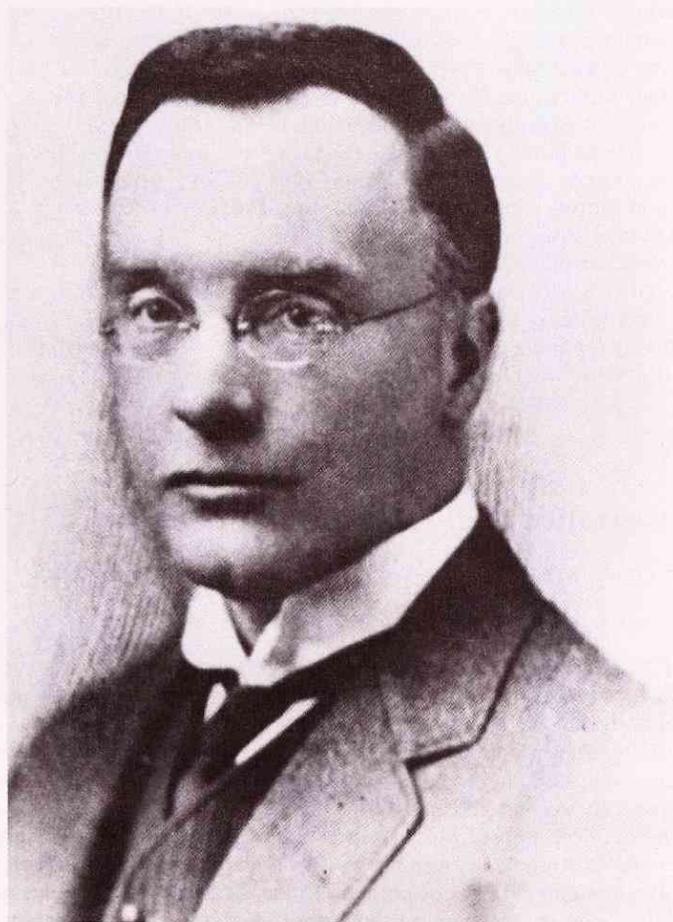
His response was to look at the evidence. On 20 June 1886, a very cold day, he had admitted an eighteen-year-old single girl 'clad only in one petticoat and a print dress' who was delivered of a living child by axis traction forceps. He had had to syringe her uterus for retained products, but otherwise she appeared well. Six days later she was dead from septicaemia and a ruptured uterus. But the timing and the nature of the septicaemia puzzled him and he wasn't convinced that it was entirely the environment of the isolation ward that was to blame.

A week later he began to document in close detail the post-partum condition of a hundred consecutive midwifery patients, noting perineal lacerations, temperatures and even the slightest complication. It was an appalling picture. Just eleven of the one hundred were discharged as 'well', six as 'convalescent' and five left without permission. Thirty-six had serious infections, and another young mother returned to the infirmary six weeks later almost dead from salpingitis.

Seven of the one hundred women died: one from Bright's disease, one from typhoid, one from pneumonia, two from puerperal septicaemia, one from post-abortals sepsis and one from tuberculosis of the knee joint and pyemia. This last poor soul's temperature reached 106° before she died and a patient in the infirmary fled the hospital 'through fright at the death of G'. (The surviving baby died as a toddler from shock after being burnt on the hip at her foster parents' home).

Forceps were used in only three deliveries, but one woman had a destructive operation where the foetus needed to be decapitated in utero. A dreadful thirty-five per cent had lacerated perineums, and the lacerations went in groups suggesting that some shifts of midwives and students were less skilful than others.

Of the one hundred babies, eight were stillborn, forty-three I cannot trace, thirty-eight were confirmed dead by the age of two, and just twelve died as adults in Victoria. Only three lived past the age of seventy-five, and the two octogenarians died in state institutions.



JOHN DUNBAR HOOPER  
Photo, courtesy RWH

Dr Hooper's analysis was unmerciful. The fault lay not simply in poor practice by all concerned, but in intellectual dishonesty. He confessed to seeking every explanation but the obvious for the morbidity and deaths of women in childbirth. In his anxiety to reduce the toll, he had 'mistaken puerperal septicaemia for (1) typhoid fever, (2) pneumonia, (3) metritis, (4) puerperal mania, (5) acute rheumatism, (6) tuberculosis, and *vice versa*'.

He perceived that there was a difference between infection that appeared to develop from within the woman's system and that contracted from 'outside'. The syringing that was so recommended by the Germans, should be used only by the most skilled, and rarely. All products had to be removed from the uterus, all abrasions and lacerations treated and made clean, and there should be as little examination of the patient as possible.

Within the year, the vigorous routine of antiseptic midwifery that would endure for almost a century was introduced to the Women's Hospital, Dr Hooper's paper having turned the tide of medical opinion. In the 1920s Dunbar Hooper was instrumental in the establishment of the first chair of obstetrics at the University of Melbourne. It is more than fitting that it is now named after him.

Professor Janet McCalman  
Director, Johnstone-Need Medical History Unit  
School of Population Health

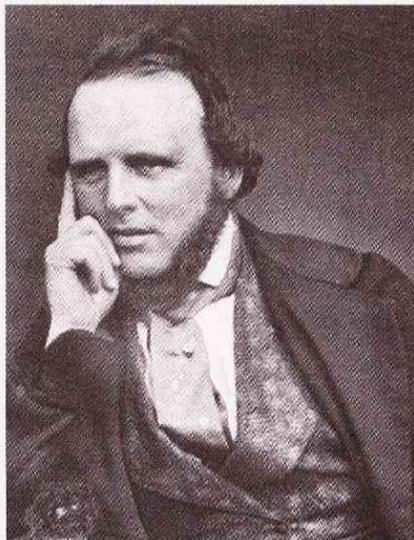
For a fuller account see *Sex and Suffering: women's health and a women's hospital, 1856-1996*, Melbourne University Press, 1998.

## TREATING THE PAST

### How Melbourne Medicine Came of Age



GODFREY HOWITT



DAVID JOHN THOMAS

FROM THE EARLIEST days of exploration and settlement of the Port Phillip district, medical men have been conspicuous and, in many instances, integral to the survival and growth of the colony. While the south eastern coastline was being explored (1792-1835), the surgeon was as important as the surveyor to have on board ship. From 1834, as land was taken up by pastoralists, medical men were prominent amongst the grazier-capitalists who laid claim to holdings around the bay and the fertile plains to the west, although they largely abandoned the practice of medicine as they took up their pastoral interests.<sup>1</sup>

A subsequent group of medical men, however, who arrived in or before 1841, many working their passage from Great Britain as ship's surgeon, remained career practitioners. The apprenticeship papers, testimonials, academic and corporate affiliation certificates, and records of hospital training they brought with them suggest that they came as immigrants, intent on settling and establishing themselves in practice.

Among this group of doctors were fifteen signatories to a document of primary significance in the profession's history in Victoria. Formerly part of the AMA collection and now held in the Medical History Museum at the University of Melbourne, this document represents the first steps taken towards organising the essential professional medical institutions and regulatory bodies in the infant town. It takes the form of a handwritten petition addressed to Sir George Gipps, Governor of New South Wales and, although undated, was most likely planned for presentation to him on or around his visit to the settlement in October 1841.<sup>2</sup> The petition represents the earnest desire of a small and isolated community of medically trained men to form a professional body for mutual support in what was then a bleak settlement, far from the social and intellectual climate of home.<sup>3</sup>

The petition referred to the *Act 2nd Victoria No.22* passed in the Legislative Council (1837), which had led Governor Gipps to appoint a medical board to examine and authenticate the credentials of persons wishing to be declared legally qualified medical practitioners within the colony of New South Wales. This jurisdiction included the district of Port Phillip but there was 'much inconvenience, delay and even risk incurred in the transmission of the necessary documents to Sydney', which meant that a number of qualified Port Phillip doctors were not

registered. Keen to settle these irregularities, and to distinguish between unauthorised intruders who were drawing business away from those with approved qualifications, the petitioners—the undersigned Physicians, Surgeons and Surgeon-Apothecaries actually practicing in Melbourne—requested that Gipps might 'direct the establishment of a Branch Medical Board at Melbourne'.<sup>4</sup>

The biographies of the petition's fifteen signatories reveal some with substantial academic and professional profiles.

**Patrick Edward Cussen MD** (1792-1849), arrived in Sydney on the *Majestic* in 1837 and went to Port Phillip as government medical officer, where he purchased an allotment in the second Melbourne land auction. He was the first public vaccinator and ran the first one-room infirmary in

a sod hut on the western market site. In 1839, Cussen performed the first recorded surgical operation in the district. He was the first president of the Port Phillip Medical Board and inaugural president of the Port Phillip Medical Association in 1846.

**Godfrey Howitt MD, FRCS** (1800-73), arrived in Port Phillip (via Hobart) on the *Lord Goderich* in April 1840. He practised as a physician for thirty years on the corner of Spring and Collins Streets in Melbourne and was leader of the private practitioners fraternity. Howitt was honorary physician to the Melbourne Hospital and was appointed to the first Port Phillip Medical Board. He was an early member of the Port Phillip Medical Association and active as an anthropologist, explorer, naturalist, pastoralist and entomologist. He died at his Caulfield residence.

**John Patterson MD** (1789-1853), was born in County Tyrone, Nth Ireland, and sailed as assistant surgeon on the frigate *Blanche* in 1810. He was a surgeon in the Royal Navy in 1816 and surgeon on the emigrant ship *John Barry*. He sailed, with his family, as surgeon superintendent on the emigrant ship *Argyle*, arriving in December 1838. Patterson first registered in NSW in 1839 and arrived in Port Phillip in the same year, becoming the first immigration officer in 1841. He lived in Swanston Street and worked in private practice.

**David John Thomas LSA, MRCS, MD, FRCS** (1813-1871), was born in Wales and sailed as surgeon superintendent on the *Louis Campbell* with his sisters, arriving in Launceston in January 1839. He joined the first staff at the early Melbourne Hospital in Bourke Street as a surgeon in 1841 and was among the first elected surgeons at the new Melbourne Hospital in 1847, remaining there until 1853. Thomas was on the first committee of the Port Phillip Medical Association in 1846. He championed the use of anaesthesia and is believed to have been first in the district to use ether (for an amputation), and possibly also chloroform. He departed for Europe on the *Northumberland* with his wife and family in 1853, returning after completing his doctorate on '*Champion of the Seas*' at St Andrews, in November 1859. In 1865 he was president of the Medical Society of Victoria and he held appointments of official visitor to Kew Asylum, and honorary physician to the Deaf & Dumb Institute and to St James Training Institute. In 1867 he was president of the annual Ballarat Eisteddfod.

**David Elliot Wilkie MD, MRCS, LRCS** (1815-85), arrived in South Australia as surgeon superintendent on *Lloyds* in December 1838 and in Port Phillip in March 1839. He was honorary physician at the first Melbourne Hospital in Bourke Street in 1840, an inaugural member of the Port Phillip Medical Association and, in 1852, chairman of the Victorian Medical Association. He was an elder of the Presbyterian Church and, from 1858, a longtime member of the Victorian Legislative Council. Wilkie died in Paris.

**William Byam Wilmot MD, LRCP, LRCP** (1805-71), served as surgeon superintendent on the *Coromandel*, arriving in Sydney in 1839. Wilmot first registered in NSW in 1840 then moved to Melbourne. He was Melbourne's first coroner and sat on the first Port Phillip Medical Board, retiring to England in 1863.

When the Port Phillip Medical Board was established in 1844, four of the petitioners, Drs Cussen, Howitt, Wilmot and Hobson, comprised the first board, with Cussen as president. The first list of registered practitioners in the district, published in January 1845, showed that twenty-one men had presented their papers to the board. This number increased slowly until in 1850 the number of registered practitioners stood at fifty-three. With the discovery of gold, immigration to the colony soared and registrations grew to seventy in 1851 and to 100 men by 1852. This influx brought men such as Richard Thomas Tracy, Thomas Shearman Ralph, James Robertson and James Edward Neild—men who would become leaders in the future university and clinical schools.

It remains puzzling why we find the earlier medical men, with qualifications from the finest universities and hospitals, practising within such a young colony, on the edge of a vast unsettled land, and so far from home. While personal factors may have prevailed, some acquaintance with the socio-economic factors and political climate in Great Britain might also help explain.

Without the right social connections or a hospital position where a newly qualified doctor might attract wealthy private patients, the decades leading up to the mid-nineteenth century were difficult years to set up in private practice. As a profession, medicine did not hold the status it does today and its past ties to a commercial world of competition and profit were not commensurate with the status of a gentleman. Depending on the patronage of the more affluent patients of the new middle classes, or an attachment to one of the many poorly paying provident or friendly societies meant a loss of autonomy irksome to a young man with energy and initiative.<sup>5</sup>

At this time Britain was experiencing considerable change in its economic and social class structure, caused by the industrial changes which led to the demise of farm and manual labour and their replacement by mechanisation. There was widespread concern, particularly towards the late 1830s and early 1840s, when poor harvests and falling wheat prices broke what had been a trade boom. This recession in England saw many thrown out of work, resulting in serious political unrest.<sup>6</sup> For the unemployed or the struggling worker, emigration became the way to a better, independent life, offering just reward for labour, and a lessened fear of poverty. It is not apparent that any of Melbourne's pioneer doctors suffered this forced emigration, but the unstable economic conditions throughout Britain in the 1830s and '40s affected everyone, and may well have made a fresh start in a new land an appealing proposition.

It is probable that our early group of doctors brought with them their country's nineteenth century belief in progress and development and laissez-faire attitude towards the acquisition of wealth and reward by individuals prepared to work. The colony needed finance, population and 'industry' and Britain, keen to ease its burden of overcrowded cities, growing unemployment and political unrest, placed nothing in the way of those wishing to go.<sup>7</sup> Once here these men took on official duties and corporate responsibilities within their profession as well as additional cultural, and community activities. Gradually they helped to

create the institutions and professional associations familiar at 'home'. Many of the petitioners came to the forefront again in 1846, as organisers of the Port Phillip Medical Association. Godfrey Howitt, in particular, was a member of the first University Council in 1853 and of the Medical School Committee in 1860, and fought alongside AC Brownless throughout the decade that saw the establishment of the Melbourne Medical School.

As assisted passages brought more people to the colony, and with the demographic changes brought about by the discovery of gold, the city would not look back. But the initial ground had been broken for these later arrivals by the efforts and confidence of the first colonial pioneers, among them the medical men who laid down the fundamental institutions and practices, the basis for the well-being of the future city and its inhabitants.

Ann Brothers  
Curator, Medical History Museum

## References

- 1 E Alan Mackay, writing in the *AMJ* Sept 1936 on 'Medical Practice during the Goldfields Era', states that he collected over forty names of medical men holding pastoral leases before Separation.
- 2 This document is currently on display in the Medical History Museum in the exhibition *Treating the Past – how Melbourne Medicine came of age*.
- 3 AW Shaw, *The History of the Port Phillip District: Victoria Before Separation*, Miegunyah Press, 1996, Ch.8. In March 1837 when Governor Bourke arrived from Sydney to inspect the settlement he found the population of the District had grown to '450 souls'. AJ Hopton, 'Rural Port Phillip, 1834 – 1851'. *Royal Australian Historical Society, Journal and Proceedings*, Vol XXXVI, Part V, 1950. The first census taken in 1838 revealed the presence of around 3500 people (3080 males and 431 females) in the District of Port Phillip, a figure which by the second census of 1841 had grown to 11 738, of whom 4479 were now at Melbourne. Melbourne was declared a town in 1842, and a city in 1847. Howard Boyd Graham, 'Happenings in the Now Long Past', *AMJ*, Vol II No.7 1952.
- 4 The problem of 'quacks' practising throughout the colony was not of course settled with this, nor with a subsequent Act passed in 1852 in the Victorian Parliament. The huge influx of immigrants seeking gold from 1851 drew with them large numbers of unqualified men who also sought to make their fortune on the goldfields. Registration did, however, prevent the unqualified from obtaining official or government positions, the avenue or first recourse for the newly arrived doctor, in need of immediate work.
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- 6 Asa Briggs, *The Age of Improvement 1783 – 1867*, London, (1959) 1975, Ch.6.
- 7 Helen R Woolcock, *Rights of Passage – emigration to Australia in the Nineteenth century*, New York, 1986. Preface & Ch.I.

To His Excellency Sir George Gipps, Knight,  
Captain General and Governor in Chief of the Territory of New South  
Wales and Vice-Admiral of the same

The Humble Petition of the undersigned Physicians, Surgeons, and Dentists  
of the Colony of New South Wales, in the County of Melbourne, in the District of  
**Treating the Past—how Melbourne  
Medicine Came of Age**

is on display at the  
Medical History Museum  
Level 2, Brownless Biomedical Library,  
The University of Melbourne

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