



UNSW
AUSTRALIA

2014 Annual Report

Never Stand Still

Faculty of Medicine

St Vincent's Clinical School



The Annual Report is published by:
St Vincent's Clinical School, UNSW

Editor: Professor Allan Spigelman

Design & Layout: Naomi Esselbrugge

All photos used with permission

Cover Images: 2014 Year 6 Class; Phase
2 students with Dr Clive Sun; Phase 3
students with Dr Rohan Gett

CONTENTS

THE SCHOOL & UNIVERSITY	Introduction: Head of School	4
	From the Director of Medical Student Education	5
	Faculty & University News	6
	Administration Update	7
	Awards & Acknowledgements	8
	Highlights & Events	10
THE HOSPITALS, THE CLINIC & COMMUNITY	St Vincent's Hospital: Chief Executive Officer	14
	St Vincent's Clinic &	16
	St Vincent's Private Hospital	
	Community Projects	17
TEACHING & LEARNING	Phase 3 (Year 5)	18
	Phase 2	20
	Independent Learning Projects	22
	Honours Projects	28
RESEARCH	Postgraduate Report	31
	Successful Grant Applications	32
PEOPLE	UNSW Conjoint Staff	34
	Appointees	
	Clinical School Staff Members	36
IMPORTANT DATES	2015 Teaching & Examination Overview	38



Professor Allan Spigelman
Clinical Associate Dean

INTRODUCTION

I am pleased to again write the introduction to our Annual Report. Pleased, because it is an opportunity to thank all staff and patients who contribute to making the next generation of doctors caring, compassionate, committed, safe, effective and efficient, so that they can provide high quality care while working as part of a multidisciplinary team; and pleased that the content of this document reflects the teaching, research and community activities of the UNSW St Vincent's Clinical School, working in harmony with those on the St Vincent's, Sacred Heart and Garvan campuses.

This year we saw the appointment of a new Chief Executive Officer for St Vincent's Hospital, A/Professor Anthony Schembri, to whom we extend a very warm welcome. A/Prof Schembri chaired the Clinical School Grand Rounds in 2014, and taught the students in their Preparation for Internship term, which was a first for this campus.

We are very grateful to noted author Diane Armstrong, who has gifted the School with an annual prize in honour of her late husband, Dr Michael L Armstrong. The prize is for excellence in general medical clinical skills.

Thank you all again for your contributions to our School in 2014. We look forward to an even better 2015.



FROM THE DIRECTOR OF MEDICAL STUDENT EDUCATION

Dr Darren Gold
Director of Medical Student Education

Having been a Senior Lecturer in surgery and academic since 2007 it is a pleasure to write this annual report as the new Director of Undergraduate Medical Education for St Vincent's Clinical School, UNSW. I would like to thank my predecessor A/Professor Segelov for her hard work and achievements during her 9 years in the role. During my seven years as an academic I have seen the Clinical School go from strength to strength.

It was not all that long ago that there were only one or two academics in each of medicine and surgery but those numbers have grown significantly over the last few years with the sustained expansion in academic positions which has facilitated a much greater breadth and depth of teaching and research within the campus. This in addition to the wide range of resources that can be found within the campus, along with the numerous conjoint appointmantees at St Vincent's Public and Private hospitals and St Vincent's Clinic, there is more opportunity for medical student learning and engagement than there ever before.

Several initiatives over the years such as the pre-admissions centre in the Private Hospital have further broadened the exposure of our students to patients, additional to that which can be found in consulting rooms, on the wards and in theatres. The dedication of all the lecturers and teachers of medicine and surgery within the campus increases the learning opportunities of our students in all Phases, and again this year this has been reflected in the excellent results that have been achieved by our final year students in the Phase 3 examinations.

The school continues to run incredibly efficiently thanks to the management of Melinda Gamulin and the administrative skills of Naomi Esselbrugge and Julee Pope assisted by Casssandra Shearer, and I would like to take this opportunity to thank them for their hard work and organisational skills in ensuring that the tutorials, lectures, practical workshops and examinations run so smoothly.

The end of 2014 we saw the PRINT Term preparing Phase 3 students for their internship and I wish them all success in their future careers. Hopefully, they will look back on their association with St Vincent's Clinical School with pride and inspiration, while we look forward to one day perhaps, seeing some of them back here in a teaching and research roles themselves.



FACULTY & UNIVERSITY NEWS

Professor Terry Campbell
Senior Associate Dean

The big news for Universities in general in 2014 was the Federal budget and the various issues related to it, none of which seems likely to come to pass in the immediate future. Deregulation of Universities, allowing them to charge essentially the fees they decide, was a feature of the budget as announced. This does not look like getting through the parliament and whatever one believes of the principle, it is very destabilising both to the Universities and to current and would-be students while this drags on, as Universities are unable to plan and signal future fee levels and students are unsure as to what they might be getting themselves into. Another budget issue, impacting particularly on medicine, is the planned Medical Research Futures Fund. This, should it proceed, may well lead to an increase in medical research funding, which is certainly timely given the abysmal success rates with the recently-announced NHMRC funding round.

Closer to Darlinghurst, 2014 saw the move of the laboratory side of the Kirby Institute to the wonderful newly redeveloped and expanded Wallace Wurth Building on the main UNSW campus. Clinical research and clinical care remain at St Vincent's and part of my role as Director of Research for St Vincent's Hospital is to establish a new home for this work. In the first instance this will be in the old Centre for Immunology building. High-level planning is in train for a longer-term solution which may involve a new building, or reconstruction within the old Cahill building.

For UNSW more broadly, there are many changes looming in 2015. We have a new Vice-Chancellor who for the first time in UNSW history is a medical professional. Professor Ian Jacobs is a Gynaecologist/Oncologist who is still active in medical research. Much of his recent activity has involved working at a high level in Academic Health Science Centres, initially in London and then in Manchester, and it seems likely that he will be supportive of the same model of interaction between Universities (including their medical and nursing schools), and the health and hospital systems. We have done quite a lot towards establishing models along these lines around St Vincent's Hospital and the other teaching hospitals affiliated with UNSW, and it is likely that you will hear more of this model in coming years. Mid 2015 will also see the arrival of the new Dean of Medicine. It is opportune at this time to express our deep thanks to Professor Peter Smith who has led the faculty extremely well for the past 10 years, a time when the new curriculum, developed by his predecessor Professor Bruce Dowton, has been bedded-down and recently re-accredited by the Australian Medical Council and when the research enterprise of the faculty has gone from strength to strength.

A handwritten signature in black ink that reads "J. Campbell". The signature is written in a cursive, flowing style.



Melinda Gamulin
Clinical School Manager

ADMINISTRATION UPDATE

2014 has been quite a busy year for the St Vincent's Clinical School.

Thanks to funds from Health Workforce Australia for clinical training, we were able to do some minor refurbishment of our Clinical Teaching Area on Level 5, deLacy Building. The funding allowed us to install a video link from Clinical Teaching Area 2 to the Don Harrison Patient Safety Simulation Centre to increase the number of students, nursing staff and allied health professionals at the hospital to access and participate in simulated learning experiences.

The gift to tutors and conjoints staff this year was a UNSW Medicine Power Bank (a portable device to charge your mobile phone). The Power Bank takes 4 hours to charge and once charged depending on your phone it can last for 3 days without charging again.

The School could not function without the support of Conjoint staff, St Vincents Hospital, the Faculty of Medicine, UNSW, the local community and the patient population and, of course, our student body. We value the contribution of these individuals and groups and seek their ongoing support next year.

I look forward to working with you all again in 2015!

AWARDS & ACKNOWLEDGEMENTS



Dr Peta Sacks with Prof
Allan Spigelman

2014 CLINICAL SCHOOL TUTORS OF THE YEAR

JMO Tutors of the Year:

Dr Peta Sacks and Dr Krishnan Parthasarathi

RMO Tutor of the Year:

Dr Aviv Pudipeddi

Registrar Tutor of the Year:

Dr Mayooran Namasivayam

Consultant Tutor of the Year (SVH):

Dr Rohan Gett

Consultant Tutor of the Year (SVPH/SVC):

Dr David Roy



Dr Aviv Pudipeddi



Dr Mayooran Namasivayam



Dr Rohan Gett



Amy Liu with Prof Allan Spigelman

2014 STUDENT AWARDS

St Vincent's Clinical School Prize - Best performance in the Phase 3 Integrated Clinical Examination in clinical disciplines (Medicine, Surgery and Emergency) for students based at St Vincent's Clinical School: Amy Liu

Doug Tracy Prize for Surgery - Best performance in Surgery based on course results and the Phase 3 Integrated Clinical Examination: Amy Liu

John Hickie Prize for Medicine - Best performance in Medicine based on course results and the Phase 3 Integrated Clinical Examination: Christine Ma

Michael L Armstrong Prize - Winner: Amy Liu

Michael L Armstrong Prize - Highly Commended: Christine Ma and Annabel Barton

Independent Learning Project/Honours Grand Rounds Presentation - Best presentation at the 2013 ILP/Honours Grand Rounds: Anita Puvanendran

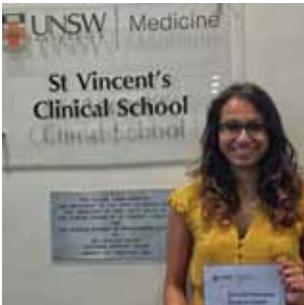
Independent Learning Project Prize – Based on the 2013 Projects: Jacqueline Ho

Student Researcher of the Year Award: Deborah Barber

University Medal: Special Congratulations to Amy Liu who won the University Medal for Medicine



Christine Ma with Diane Armstrong, wife of the late Dr Michael L Armstrong



Anita Puvanendran

2014 CLINICAL SCHOOL STAFF AWARDS

Publication Prize: A/Prof Mark Danta

Research Prize: A/Prof Kumud Dhital

Community Service Prize: Prof Allan Spigelman



Deborah Barber

2014 DEANS AWARDS - DEANS LIST

The Combined Teaching Hospitals Senior Staff Prize for Overall Performance in Phase 3 for the best overall performance in Phase 3: Amy Liu



Cassandra Shearer
Soccer Coordinator

HIGHLIGHTS & EVENTS

ANNUAL DOCTORS VS STUDENTS SOCCER MATCH

It was a glorious and picture perfect sunny day on Friday 16th May, 2014 for the Annual Doctors v Students soccer match, held at Weigall Oval, Sydney Grammar's sporting field.

The Doctors suffered an early loss when Mark Danta, their captain, was involved in a head clash and was transported by ambulance to the ED for several stitches. By the time Mark returned in the second half, much other damage had been done – on the scoreboard that is. While the number of students grew over the morning, the doctors decreased in number, as theatres and other clinical commitments took hold. Well at least that's the excuse offered by the staff side.





The talent for the students this year was evident with some excellent displays of skill, including exceptional goalkeeping. The match was punctuated by the award of several yellow cards against the students by the esteemed referee, Dr Steven Faux, culminating in the penalty that led to the only goal scored by the doctors side. The staff team also managed to hit the post on at least 3 occasions.

The 1st goal was scored by the students from a breakaway down the right side of the field. The keeper had come out of the box and was beaten when the ball was chipped over his head.

The score was 3-0 at halftime to the students, who had some very fast and fit, competitive, not to say combative, players with plenty of skill and pace.

The students were eventual winners but a late goal from the doctors meant that the final score was 7-1, with a very happy captain of the student's team accepting the trophy from Professor Spigelman, who initially indicated that the customary practice of awarding the trophy to the team that scored the most goals might be supplanted by awarding it to the team with the fewest yellow cards.

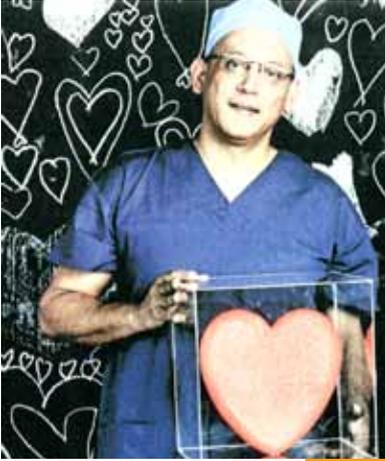
A big thank you to Sydney Grammar School for the use of their Oval again this year and also their BBQ facilities.

Special mention goes to Bob Morris from SVH Transport Department for providing assistance to Mark Danta with his nasty head gash and for the First Aid support for all who required this. Also special thanks to Steven Faux for refereeing the match. Pollyana (Chihuahua cross), our Clinical School mascot, made an appearance to her first soccer match - her reward was a BBQ Sausage!!

Goal scorers for the Doctors: George Blackwood

Goal scorers for the Students: Nick Fitzgerald, Rohan McLachlan (2), Amin Amer (2), Ragu Paraparan, Dominic Vickers





Kumud Dhital
Conjoint Associate Professor

HEART IN A BOX

The St Vincent's Hospital Heart Lung Transplant Unit has carried out the world's first distant procurement of hearts donated after circulatory death (DCD). These hearts were subsequently resuscitated and then successfully transplanted into patients with end-stage heart failure.

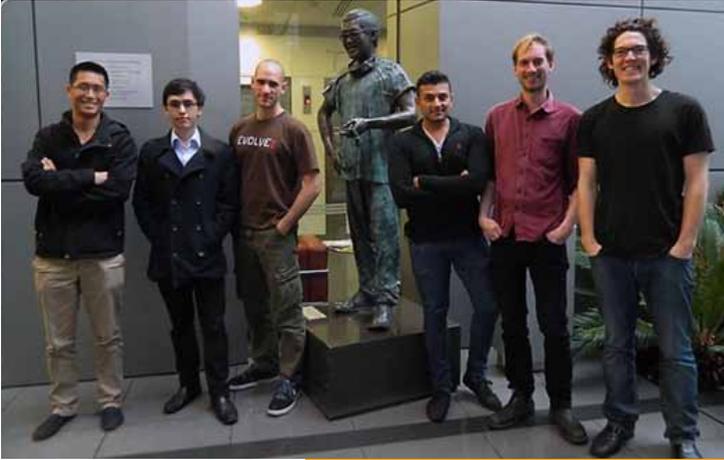
Transplant Units until now have relied solely on donor hearts from brain-dead patients whose hearts are still beating.

Coined the "Heart in a box", for the past several months the OCS (Organ Care System) has provided the transplant surgeons greater versatility with regard to both organ preservation and resuscitation. This has enabled the St Vincent's Transplant Unit to conduct several regular heart transplants this year through more long distance organ retrievals and most importantly, retrieval of "marginal hearts", that is, brain death hearts previously regarded as being unsuitable for transplantation.

This is the first time internationally that human heart transplantation has been achieved with hearts donated following circulatory death and procured at a distance with portable organ preservation technology.

In acknowledging the significance of this milestone for his Unit, Professor Peter MacDonald, Medical Director of the St Vincent's Heart Transplant Unit, Head of the Transplantation Research Laboratory at the Victor Chang Institute and Professor of Medicine at UNSW said, "In many respects this breakthrough represents a major inroad to reducing the shortage of donor organs. As we mark the 30th anniversary of the St Vincent's Heart Lung Transplant Unit and the 20th anniversary of the Victor Chang Institute this year, this is a timely breakthrough. In all our years, our biggest hindrance has been the limited availability of donor organs."

According to St Vincent's Heart/Lung Transplant surgeon and Victor Chang Institute researcher, A/Professor Kumud Dhital, who performed both transplants, "It is interesting to note that DCD hearts were utilised for the first wave of human heart transplants in the 1960's with the donor and recipient in adjacent operating theatres. This co-location of donor and recipient is extremely rare in the current era leading us to rely solely on brain dead donors – until now.



BIOMOD

A team of five undergraduates from the Victor Chang Cardiac Research Institute under the supervision of Dr Lawrence Lee competed against the best in the world at Harvard University.

BioMod is a design competition where previous winners have used DNA and proteins as building blocks to create autonomous robots and molecular computers.

Up against 33 teams from around the globe, it is the first time a team from Australia has competed in the Ivy League challenge. They received first prize for best video, second prize for best presentation and the audience choice award, as well as the overall Grand Prize.

The team consisted of UNSW students Robbie Oppenheimer, Andrew Tuckwell and Jon Berengut. Alongside Nicholas Berg (USYD), Cyril Tang (USYD) and Anirudh Balachandar from UTS.

This year the team managed to program DNA to detect disease. They built a DNA machine that works a bit like a light switch. When the DNA comes into contact with disease, it turns on and starts to glow like a beacon – alerting scientists and doctors of its presence. They designed it so that in principle DNA could be programmed to detect different types of infectious diseases, such as HIV or tuberculosis.

This initiative was financially supported by St Vincent's Clinical School, partially funding flights for an Honours student.



ST VINCENTS HOSPITAL

Conjoint A/Professor Anthony Schembri
Chief Executive Officer

This report marks my first as CEO of the St Vincent's Health Network Sydney and as a proud Conjoint Appointee of the Clinical School.

This past year has been a significant and important time for St Vincent's as we celebrated the 175th anniversary since the first Sisters of Charity arrived in Australia. That this milestone year has coincided with a monumental period of achievement across the St Vincent's Campus, should come as no surprise. These achievements closely reflect the longstanding relationship between UNSW and St Vincent's Hospital Sydney.

For those five Sisters who commenced our mission here in 1838, their legacy of being extremely industrious, compassionate and forward-thinking continues to thrive at St Vincent's today, especially in terms of the quality of care that we provide. This year has seen St Vincent's receive resounding acknowledgement from patients and leading industry benchmark groups to show that the quality of our patient care is first class.

In an affirmation of St Vincent's Health commitment to patient-centred care, St Vincent's Hospital Sydney was recently named in the top ten hospitals in the national 2013 HCF Patient Survey. Each year HCF surveys the hospitals experiences of more than 11,000 of its members from across Australia. St Vincent's Hospital Sydney was the only public hospital listed in the top ten.

This year also saw some major St Vincent's Hospital milestones reached. This includes the 30 year anniversary of our Heart Lung Transplant Unit, Rankin Court Alcohol & Drug Service as well as the St Vincent's HIV/AIDS Unit and all major state-wide services that transformed the Australian healthcare landscape; all made possible via our clinical, research and teaching endeavours in partnership with UNSW.

It was April 1984 when Victor Chang launched the St Vincent's National Heart Transplant Program and performed life-saving surgery on Australia's youngest heart transplant recipient, Fiona Coote. In acknowledging this milestone, Health Minister Jillian Skinner noted "The pioneering efforts of Dr Victor Chang - which have been

continued by the Unit's multi-disciplinary approach to patient care - have ensured that St Vincent's Hospital is recognised internationally as a leader in heart/lung transplantation."

Fittingly in its 30th year, the St Vincent's Transplant Team recently announced to the world that they'd carried out the first distant procurement of hearts donated after circulatory death (DCD). These hearts were subsequently resuscitated and then successfully transplanted into patients with end-stage heart failure. Transplant Units until now have relied solely on donor hearts from brain-dead patients whose hearts are still beating. The use of DCD hearts, where the heart is no longer beating, represents a paradigm shift in organ donation and will herald a major increase in the pool of available hearts for transplantation. Much of the research and practical delivery of this was conducted by Conjoint A/Professor Kumud Dhital, while he was a clinical Academic in the Clinical School.

Also in 1984, St Vincent's Hospital opened the country's first dedicated HIV ward and again, this milestone coincided with some important research in which St Vincent's researchers found a remarkable new direction in HIV research, and new hope for HIV positive people with leukaemia and lymphoma. This research continues the extraordinary story, has seen St Vincent's transform from a hospital courageously responding to a newly discovered and deadly epidemic, to a health service at the forefront of the international pursuit of effectively treatment of HIV patients.

St Vincent's Hospital has long found itself at the epicentre of the community's problems with alcohol abuse and illicit drug use over the decades. Since the opening of Rankin Court in 1984, 30 years ago, the St Vincent's Alcohol & Drug Service has played an important part in minimising the harms to our community stemming from various drug problems.

Rankin Court was Australia's first coordinated methadone clinic and its establishment soon gave rise to important harm minimisation models including the needle exchange program which started in 1986 in the midst of Sydney's HIV crisis, and advocating for the safe injecting room soon afterwards.

This year we celebrated the 50th anniversary of the St Vincent's Pain Service and the efforts of Dr Brian Dwyer back in 1962 to establish the first multidisciplinary pain service in Australia influencing other hospitals to do the same and fast-tracking the development of palliative care as a speciality. Today, the St Vincent's Pain Service comprises a multidisciplinary team that offers treatment for acute pain, chronic pain and cancer pain. The Service is currently collaborating with CRUFaD - the St Vincent's UNSW Clinical Research Unit for Anxiety and Depression to develop an online program for people living with chronic pain who are either unable to physically attend clinics or who are living in remote areas.

While the endeavours I have highlighted here are diverse, they share a unique commonality in that they all represent three major pillars at St Vincent's Hospital: our Mission, Teaching and Research. Be it novel methods in treating HIV, outstanding patient survey results, on any given day - we are responding to community need in both an innovative and effective way.

Finally, I would like to thank my fellow conjoint appointees who contribute of their time to the teaching of our students, the Staff from the Clinical School for their ongoing support and teaching and Professor Spigelman for his leadership of the School.



Conjoint A/Professor Anthony Schembri with PRINT (Preparation for Internship) students



Ms Anne Fallon, Manager, Education Training & Development

ST VINCENTS CLINIC & ST VINCENTS PRIVATE HOSPITAL



Ms Michelle Wilson
St Vincent's Clinic Executive Director

In 2014, St Vincent's Private Hospital Sydney and St Vincent's Clinic continued their commitment to and involvement with the teaching and learning of undergraduate medical students on the St Vincent's Campus.

The Strategic plans of both St Vincent's Private Hospital Sydney and St Vincent's Clinic include a strategy to increase clinical capacity. During the 2014 year, the Phase 3, medical student placements included Operating Suite, Day Surgery, the Patient Care Areas, Pre Admission Centre as well as gaining experience in the private rooms of the VMOs in St Vincent's Clinic.

Following a review in 2013 of the student allocation to Pre Admission, the students were allocated 1.5 clinical placement days (CPD).

34 students were allocated to Pre Admission providing a total of 54 CPD. In the Pre admission centre the students complete a medical and patient history as well as sitting in with the anaesthetist for the pre hospital admission anaesthetic assessment. Students also experience the documentation process using the deLacy ITsystem. The evaluations of the rotation remain very positive.

Interprofessional teaching and learning in 2014 was successful for the UNSW Medical students and their fellow medical and nursing student colleagues from Notre Dame University and other partner universities, participating in shared teaching and learning activities on offer at St Vincent's Private Hospital Sydney, St Vincent's Clinic and UNSW Clinical School.

The St Vincent's Clinic Foundation awarded \$500 for the best student's Independent Learning Project. The successful student recipient of this award was Jacqueline Ho.

St Vincent's Private Hospital Sydney and St Vincent's Clinic 2013 Tutor of the Year was awarded to Dr David Roy.

St Vincent's Private Hospital Sydney and St Vincent's Clinic will continue to provide a leadership role in medical student teaching and learning in the private sector.

COMMUNITY PROJECTS

COMMUNITY PROJECT Gorman House AND Tierney House

Alcohol and Drug & Homeless Health St Vincent's Hospital

St Vincent's Clinical School together with the St Vincent's Hospital's Alcohol & Drug Service and the Homeless Health Service are running a community involvement project for students in Phase 2 & 3. Students are encouraged to get involved as a volunteer in the units.

Students may be able to participate in the following:

- Meet and work with the staff and volunteers
- Talking and listening to clients
- Learning about substance use, dependence and homelessness
- Get involved in extra-curricular activities such as music, art, gardening, outings, cooking, games, sporting activities etc.

This is an exceptional opportunity for students to become engaged in the community and further explore the socio-economic issues faced by the residents of Darlinghurst and surrounding areas, while still being able to use the clinical skills of a medical student.

This would require a minimal time commitment of some after-hours or weekends. Students would be expected to be professional and maintain confidentiality standards.

If you would like to know more information or register your interest to be involved, we will be holding an information session on the 24 July at 1PM (following on from the Pizza Lunch).

If you can't make this session, but still want to be involved, please email your details to Julee or Naomi at stvcs@unsw.edu.au

GORMAN & TIERNEY HOUSES

Several students this year took up the opportunity to spend time with the clients of both Gorman and Tierney Houses.

Although this project is still in its infancy we look forward to continuing to build and further develop the relationship between the Houses and the Clinical School in order to offer students further opportunities to be engaged with the community.

LIVING WITH PARAPLEGIA

The Living with Paraplegia project was given a break in 2014 and we aim to restart it again in 2015 with some fresh ideas. Students will be encouraged to get on board to further develop the relationship between Friends of Paraplegia (Tanzania), ParaQuad NSW and St Vincent's Clinical School.

FUTURE PROJECTS

We are working on several other projects that will be available for students to participate in during 2015.



PHASE 3 (YEAR 5) STUDENTS

2014 was a great year for the 5th year students as we embarked a new phase in our medical education. As the first time on permanent rotations, we were exposed to the clinical setting like never before and have come away from it feeling more closer (but still far!) to being a doctor.

Surgery terms were greeted initially with groans of early morning starts, but quickly turned into excitement from being involved on the wards and in theatres. Lunch breaks were spent debriefing with fellow students on the operations we saw, and the interesting patients we had. Assisting in surgery was a particularly novel and thrilling experience for most too. The surgery teams took us under their wing and provided us with a first class education. A special mention goes to my general surgery registrar who taught us for an hour (every day!) after the typically quick surgical ward round.

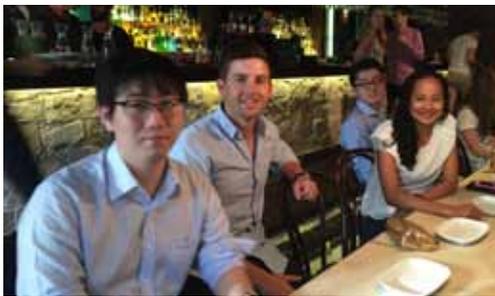
In contrast, medicine ward rounds were lengthy, but it gave us a great opportunity to become familiar with our patients and establish rapport. This was one of the most enjoyable parts of the term, along with the rewarding experience of seeing our patients get better. Much time was also spent with the interns and residents who took good care of us. To us, they felt like older siblings, leading, guiding and teaching us with every spare moment that they had. We also got to experience life as a JMO with time spent honing our skills in cannulas and note taking.

Teaching was one of the highlights, with a more personal and interactive feel than ever before. It was a pleasure to learn in such an engaging way as we received quality lessons from staff specialists in every field. Highlights for me include attending bedside tutorials with my tutors who both had different teaching styles, yet equally effective. Dr Nicholls constantly gave us practical advice on how to be a confident well-skilled doctor and recognise when patients were sick, while Dr Gett was incredibly methodical in his teaching, challenging us as we tried to figure out the diagnoses of his patients. We were blessed to have the guidance of 6th years as peer teaching was in full swing at St Vincents. The 5th years received regular biomed tutorials every week as well as mock vivas which were very well attended. Thanks also goes out to the pathology registrars and academics for their invaluable teaching.

Social events also kept things busy at the clinical school with Julee and Naomi hard at work organising them. Highlights have been the doctors vs students soccer match (better luck next year doctors), and the numerous pizza lunches which were much appreciated by all the students. Coffee times with our fellow teams have also been greatly cherished as we learned all the ins and outs of working in the medical field. Stuff you won't get from a textbook!

Personally, I have thoroughly enjoyed the year and it has been a pleasure to have been at St Vincents. A big thank you to everyone who took the time to make a difference to our medical education om 2014.

- Michael Liu



PHASE 2 STUDENTS

After two years of university based learning we were excited, but a little trepidatious to be entering Phase 2 at St Vincent's hospital. We were now being immersed in the hospital environment like we had never been before, and were eager to put our theoretical learning into a clinical context at the bedside. From the outset Dr Darren Gold impressed upon us the value of practicing medicine at the bedside, and learning with real patients to reinforce our knowledge. With our stethoscopes around our necks and our pen torches in our pockets, we were finally ready to start.

But where were we to begin? Where were the wards? Who were the doctors? Where was the best coffee to be found? Thankfully Naomi, Julee, and the rest of the clinical school staff were right there to help us. Sorting out our timetables, organising extra tutorials, and always willing to help when we needed them. And the pizza lunches were an added bonus.

We moved through the Phase 2 rotations at St Vincent's: Adult Health 1 and 2, Aged Care and Rehabilitation, and Oncology and Palliative Care. Each one brought a brand new dimension to our clinical learning a new



set of clinical skills to go with it, facilitated by our course tutors. We were blown away by the impossibly vast knowledge of Dr Russell Clark, and in Dr Rohan Gett's tutorials the hardest of concepts were made clear in only one hour. Dr Shari Parker showed us deep insights into the patient as a person, and in oncology Dr Chambers seamlessly linked patient cases to clinical science.

We also jumped at the chance to practice our procedural skills, feeling like we were well on our way to being doctors. Throughout the year we learnt how to cannulate, basic life support, interpretation of imaging, plaster casts, and much more.

St Vincent's also gave us the opportunity to have informal teaching under the guiding expertise of numerous surgeons, physicians, and allied health. Be it clinics, ward rounds, team meetings, or spontaneous tutorials, there was never a lack of opportunities to supplement our course material or satisfy our eager curiosity. Also, we have come to admire our bedside tutors for their commitment in taking countless hours out of their regular work to impart their invaluable experience and clinical wisdom. In particular, they have shown us what it takes to be a patient centred doctor, and have a good bedside manner.

This last year at St Vincent's Hospital has consolidated our clinical knowledge and practical skills, and we have been inspired by our clinical teachers for our further studies of medicine.

- Jesse Ende and Erika Strazdins



INDEPENDENT LEARNING PROJECTS

Student: Richard Tjahjono

Project: Predictors of Renal Failure in Cardiac Transplantation

Supervisor: Dr Emily Granger

Acute Kidney Injury (AKI) is an outcome that represents a significant increase in morbidity and mortality rates, however limited information exists about the incidence of AKI following cardiac transplantation. This single-center retrospective study from 2009 to 2014 analysed pre, intra, and postoperative characteristics of 111 patients who underwent orthotopic cardiac transplantation to identify risk factors for AKI and validate findings of existing literature.

Student: Harendran Elangovan

Project: The role of the hepatocellular vitamin d receptor (hVDR) in liver regeneration

Supervisor: Professor Jenny Gunton

As the hVDR is lowly expressed in hepatocytes, current thinking is that the receptor has no role to play in liver physiology. We wanted to investigate the effect that genetic knockout of the hVDR would have upon liver regeneration in mice subject to PHx where 70% of their liver is surgically removed. Following surgery key outcomes of regeneration such as the liver to body weight ratio, cell proliferation and cell cycle gene regulation were studied.

Student: Bronwyn Hoogland

Project: Assessing medical students' attitudes and knowledge towards palliative care

Supervisor: Associate Professor Richard Chye

The increasing need for palliative care has been recognised by medical schools, and many have implemented some form of palliative care education into the curriculum. Little is known about how effective these education programs are, and what impact/benefits they have for students. This project looked specifically at the UNSW Phase 2 Palliative Care education, using a before-and-after-placement survey to determine the impact on students in terms of attitudes and knowledge towards palliative care.

Student: Phillip Lo

Project: A 30-year experience of heart transplantation in New South Wales, Australia

Supervisors: Associate Professor Kumud Dhital and Professor Peter MacDonald

No studies have been published to comprehensively describe evolving and marginal heart transplantation donor and recipient profiles in Australia. In the present study, we analysed data regarding heart transplantations in New South Wales (NSW), focusing on temporal changes in patient characteristics, and the trends and influences of donor time management intervals on recipient outcomes.

This retrospective single-centre study included 847 heart transplantations performed between February 1984 and May 2014. Three decade-like eras were defined. Allograft ischaemic times, and times from brain death to organ offer and aortic cross-clamp were noted in minutes or hours. They were compared with patient characteristics and survival in years. Cox regression analysis was performed.

Over 30 years, in our cohort of 847 patients, 465 patients have died. The 1-, 5- and 10-years survival rates are 87%, 76% and 60% respectively. From 1984-1993 to 1994-2003 and 2004-2014, median (interquartile range [IQR]) donor ages have increased from 27.2 (20.3-37), to 34 (22-46) and 39 (26-49) years, respectively ($p < 0.001$). Similarly, median (IQR) ages of recipients have increased from 47 (37-53) to 51 (43-56) and 51 (39.3-58) years ($p < 0.001$). Increasing donor and recipient ages predicted greater recipient mortality. Survival probability did not differ for recipients of hearts with allograft ischaemic times at less than 2 hours ($n=159$), 2-3 hours ($n=251$), 3-4 hours ($n=233$), 4-5 hours ($n=125$) and greater than 5 hours ($n=77$) (log-rank=0.306). Times from brain death to organ offer and cross-clamp are increasing, but did not predict greater recipient mortality.

Student: Viran Jayanetti

Project: Midterm Outcomes of INTERMACS 1 Level Patients after Left Ventricular Assist Device Insertion

Supervisor: Dr Emily Granger

This study's aims were to ascertain the presence of, and identify risk factors predictive of mortality in left ventricular assist device patients, and specifically within INTERMACS 1 Level patients.

A retrospective records review was undertaken of left ventricular assist device recipients at St Vincent's Public Hospital between 1st January, 2008 and 16th July, 2014. Preoperative inpatient data (e.g. ICU length of stay and blood test results), diagnostic test results (e.g. right heart catheter results), intraoperative information (e.g. cardiopulmonary bypass time), and postoperative course (e.g. mortality) were collected for all patients.

32 of 81 patients have died at some point following device implantation. Through multivariate logistic regression, female gender severely impaired intraoperative right ventricular function, and INTERMACS 1 status were found as risk factors for mortality. Similarly, multivariate logistic regression found severely impaired intraoperative right ventricular function and INTERMACS 1 status risk factors for 90 day mortality. Subgroup analysis within only INTERMACS 1 patients was of insufficient sample size ($n=18$) for multiple logistic regression or statistically significant univariate logistic regression. However, female gender, asthma, severely impaired intraoperative right ventricular function, and concomitant cardiac surgery were found as potential risk factors for mortality in INTERMACS 1 patients.

Consequently, it is evident that there are risk factors predictive of mortality in this patient group and potentially in INTERMACS 1 patients. Careful evaluation of patients with these factors is necessary, possibly warranting exclusion. Further studies in this area must be undertaken.

Student: Sena Park

Project: Increased microRNA-10a expression is associated with greater survival of leukaemic cells

Supervisor: Professor David Ma

MicroRNAs are short, non-coding RNA molecules that have been found to play significant roles in regulation of gene expressions. This project focuses specifically on microRNA-10a and aims to explore its function in leukaemic cells. We hypothesise that its expression increases the survival capacity of leukaemic cells, especially under stress-inducing conditions, such as nutrient-deprived and cytotoxic environments.

Student: Sarinder Chahal

Project: Role of the Hepatocellular Vitamin D Receptor in Cholestatic Liver Injury

Supervisor: Professor Jenny Gunton

Aim: To investigate whether vitamin D signaling in hepatocytes influences cholestatic liver injury

Hypothesis: Vitamin D signaling in hepatocytes ameliorates cholestatic liver injury

Methods: Hepatocellular vitamin D receptor (h-VDR) knockout (KO) mice and their floxed controls (FC) were created. Mice were subjected to ligation of the common bile duct, following which they were monitored for 1 week and subsequently sacrificed. For the sham controls, the common bile duct was exposed, with no ligatures made.

Results: We found that FC mice had more severe inflammation and necrosis on H&E stain compared to KO mice. This finding was corroborated by higher expression of key inflammatory marker genes (Tnf- α , Il-6 & Cxcl-10). In spite of higher expression of the pro-fibrotic gene Timp-1, FC mice had reduced collagen deposition on Sirius Red stain as compared to KO mice. KO mice had lower expression of OST-B, responsible for bile acid excretion, and higher expression of CYP7A1, responsible for bile acid synthesis. Vitamin D metabolism also appeared to be modulated by h-VDR, as there was reduced expression of CYP27 in KO mice.

Conclusions: h-VDR plays an equivocal role in modulating cholestatic liver injury. Whilst it appears to induce a pro-inflammatory stimulus, it also attenuates liver injury by reducing collagen deposition and bile acid synthesis whilst increasing bile acid excretion. These hepato-protective effects may be exploited for therapeutic use in post-hepatic cholestatic disorders. h-VDR also plays a role in the genomic circuit regulating vitamin D metabolism in the liver. This study suggests that it up-regulates hormonally active vitamin D through CYP27 expression.

Student: Nara Sugianto

Project: Changing landscape of lung transplantation in New South Wales

Supervisors: Associate Professor Kumud Dhital and Professor Allan Glanville

Lung transplantation survival rates are potentially associated with several donor, recipient and transplant-related risk factors. Currently, there are no publications examining the changes and trends in donor and recipient profiles in New South Wales (NSW), and how these changes may influence survival. The aim of the experiment was to gain a comprehensive overview of the changes in both donor and recipient profiles in first-time lung transplantations in adults. We identified trends that have changed over the years and analysed how these changes may have affected patient survival. In doing so, we hope to correlate these changes with international trends and whether donor selection and donor management times affected mortality.

Patient risk profiles are increasing and donor marginality is developing in NSW. There is no association between longer ischaemic times, and times of brain death to organ offer and cross-clamp with higher-risks of mortality in heart transplantation recipients.

Student: Anita Puvanendran

Project: Pancreatic Trans differentiation in Type 1 Diabetes Mellitus

Supervisor: Dr Daniel Hesselton

Type 1 Diabetes Mellitus (T1DM) is an increasingly diagnosed disease in Australian children and there is a growing need for new therapeutic strategies to overcome the high rates of complications as a result of T1D. This project focuses on a beta cell regeneration method known as pancreatic trans differentiation, which involves repressing a transcription factor in the pancreas, Ptf1a, to cause the trans differentiation of acinar cells to beta cells. We developed a novel functionalised CRISPR/Cas9 system to specifically repress gene transcription and demonstrate that we are able to purify soluble recombinant protein in bacteria and that this protein is non-toxic in an in vivo zebrafish bioassay. Future studies will focus on conjugation of the repressor protein with a cell penetrating peptide to test whether Ptf1a repression stimulates beta cell regeneration in pre-clinical T1DM models.

Student: Hannah Braithwaite

Project: The Safety and Pharmacokinetics of Metformin in Hepatic Insufficiency

Supervisors: Professor Ric Day and Professor Ken Williams

Metformin in the presence of hepatic failure has been associated with an increased risk of lactic acidosis, yet there is limited evidence to support this conclusion. Further, metformin offers potential therapeutic advantage in patients with liver insufficiency. The present study aimed to investigate this issue, addressing the two key areas of concern in the use of metformin in hepatic failure. Firstly, then, the aim was to determine whether administration of metformin could be achieved safely in patients with chronic liver disease, a proportion of whom were also diabetic. The second intention was to assess the effect of hepatic dysfunction on the PK of metformin.

Two studies were conducted; a cross-sectional survey of liver disease patients currently taking metformin and a 6-week prospective, interventional clinical trial in metformin-naïve liver disease patients. Data indicated that liver disease has no significant impact on metformin PK and safety profile although further studies are required to better define dosing parameters of metformin in varying levels of hepatic dysfunction.

Student: Mr Dominic Bull

Project: Deciphering Audiosignals in Patients with Left and Bi-ventricular Assist Devices

Supervisors: Associate Professor Kumud Dhital

Initial studies into Heartware Ventricular Assist Devices (HVADs) audio signal production have given promising results in linking spectral analysis to pump setting, haemodynamic status and HVAD adverse events such as thrombus formation. It was hoped that through this study, audio signal pattern classification in HVADs, an area that is still under investigated, would be better understood. In this, I hoped to classify a 'normal' audio signal pattern, determine whether physiological variables such as MAP, HR and haematocrit have an effect on this pattern, and link pathological and/ or abnormal physiological situations with changes in the audio signal pattern. This was to hopefully give us information on the feasibility of its use in clinical practice.

My study used an electronic stethoscope (3M™ Littmann® Model 3200) to record HVAD audio signals in both left and biventricular patients (LVAD and BiVAD). Fast Fourier transform (FFT) spectral analysis of HVAD audio signals determined the presence of five peaks that followed a harmonic frequency pattern, linking pump speed to frequency peak position. Peak power density was independent of any pump or haemodynamic variables measured. Non-harmonic peak presence between 525-580 Hz had a statistically significant correlation to aortic valve opening ($p=0.023$ and $p=0.041$) in the LVAD, but not BiVAD patient cohort. Audio signal analysis in one patient with a RVAD pump thrombus was described pre, during and post thrombus; displaying a downward shift in power density and lower area under the curve. Overall, we were able to link what we saw on the spectral analysis to different scenarios related to the HVAD, displaying that it is possible to do so and highlighting possibilities for its use as a future diagnostic method.

Student: Jemma Cho

Project: Sinonasal quality of life following pituitary surgery.

Supervisor: Associate Professor Richard Harvey

Pituitary surgery has undergone significant changes from the sublabial approach to the direct transnasal method first with the microscope and now the endoscope. This study compares patient outcomes following all three methods.

A cross-sectional study of patients who underwent pituitary surgery at St. Vincent's Hospitals was conducted. Patients were contacted via phone, mail, email, and in person. Information gathered includes patient information, nasal function and treatment questions, and quality of life surveys, Sinonasal Outcome Test-22, Chronis Sinusitis Survey, and Short Form 36 version 2, was sent.

Nasal function, sinonasal treatments and medication use on disease specific quality of life surveys indicate the endoscopic approach results in less long term sinonasal morbidity. However, this impact is limited to sinonasal function as overall quality of life scores are similar.

Student: Kaalya Manique De Silva

Project: Preoperative predictors of post-implantation mortality in patients with HeartWare left ventricular assist devices

Supervisor: Professor Christopher Hayward

Background: HeartWare left ventricular assist devices (HVADs) are third-generation left ventricular assist devices (LVADs) which serve as a bridge to heart transplantation (BTT) in patients with refractory end-stage heart failure (ESHF). Existing risk assessment models used to aid patient selection and timing of implantation lack prognostic validity in the new era of LVAD support and provide poor discrimination for BTT patients. This study describes our single-centre experience with the HVAD as BTT over a 7-year period and identifies preoperative predictors of mortality within the study population.

Methods: Data from consecutive BTT patients who underwent HVAD implantation at St Vincent's Hospital in Sydney between April 2007 and December 2013 were retrospectively analysed. Descriptive analysis of baseline characteristics, univariate analysis and Kaplan Meier analysis using competing outcomes methodology were performed.

Results: A total of 52 BTT patients had undergone HVAD implantation and met the inclusion criteria. Univariate analysis demonstrated advanced age ($p = 0.009$), lower haemoglobin ($p = 0.026$) and haematocrit levels ($p = 0.034$), and lower ALT levels ($p = 0.031$) to have a statistically significant association with mortality after HVAD implantation. Competing outcomes methodology showed at 1-year post-implantation, 44.8% of patients were alive with the device implanted, 37.9% had been transplanted, and 17.3% were dead with the device implanted.

Conclusions: Parameters marking end-organ dysfunction and advanced age remain predictors of post-implantation mortality in LVAD, and more specifically, HVAD patients. Clinical outcomes are similar to those reported in previous studies, and emphasise the high mortality risk within the early post-implantation phase.

Student: Jeffrey Lewis

Project: Clinical audit of short term veno-pulmonary artery extracorporeal membrane oxygenation right ventricular support post continuous flow left ventricular assist device implant

Supervisor: Professor Christopher Hayward

Background - The audit aimed to assess the outcomes of 22 patients at St Vincent's Hospital, Sydney who between 2008-2013 received veno-pulmonary artery extracorporeal membrane oxygenation as short term right ventricular support following continuous flow left ventricular assist device implantation as a bridge to transplant. Survival to transplant was the primary outcome.

Methods - Patients' medical records were reviewed, collecting information regarding demographics, pre- and postoperative investigations, ICU length of stay, days in hospital postoperatively, duration of ECMO support, postoperative infections and survival outcomes. Statistical analysis (including Kaplan-Meier competing outcomes analysis) was performed using Prism 6 version 6.0f (GraphPad Software, Inc.).

Results - Most patients were male (68%) and classified as INTERMACS level I preoperatively (82%). Heart failure aetiology was predominantly non-ischaemic cardiomyopathy (64%). 16 (73%) patients had ≥ 1 positive blood culture(s) in the 365 days following LVAD insertion. In 8 patients this represented a new infection. Overall patient survival was 68% at 180 days, 55% at 365 days, and 45% at 730 days. 10 (45%) patients survived to heart transplantation after waiting for a mean of 405 days (± 193.37).

Conclusions - These results add to the currently scarce knowledge base of long-term outcomes for VPA ECMO patients in the setting of LVADs. This patient group are among the most severely ill of all LVAD patients. Through the use of VPA ECMO, nearly half survived to transplant. The clinical outcomes of these patients should be incorporated into the decision making process of clinicians faced with issues similar to those presented here.

Student: James Carroll

Project: Frailty Index in patients undergoing cardiac surgery at St. Vincent's Hospital

Supervisor: Associate Professor Kumud Dhital

Frailty is a concept that is poorly defined within the medical community. It is thought to contribute to the burden of disease but measuring it has been a relatively new development. This project aimed to use the St. Vincent's Frailty Index and compare it to the outcomes of patients that underwent Coronary Artery Bypass Grafts at St. Vincent's this year. The index score (out of 7) was compared to outcomes such as length of stay, time in ICU, bypass time, need to more surgery and creatinine levels. Overall, this project hopes to allow doctors to better predict the likely outcomes of patients who need Coronary Artery Bypass Grafts.

Student: Scott Ashby

Project: Patient outcomes following out-of-hospital cardiac arrest

Supervisor: Dr Emily Granger

In-hospital management of Out-of-Hospital Cardiac Arrest (OHCA) is complex as the aetiologies are varied. Acute coronary angiography has been shown to improve outcomes for patients with coronary occlusion as the cause, however these patients are difficult to identify. ECG results may help identify these patients, but the accuracy of this diagnostic test is under debate, and requires further investigation.

Methods: Arrest and hospital management information was collated retrospectively for OHCA patients who presented to a single clinical site between 2009 and 2013. Angiography results were then collected and checked for significance with survival to discharge. Presence of a severe lesion (>70%) was then compared to categorised ECG findings, and the accuracy of the test was calculated.

Results: 104 patients were included in this study, 44 survived to discharge, 52 died and 8 were transferred to other clinical sites. Angiography appears to significantly correlate with survival to discharge. ST elevation on ECG showed 54.8% sensitivity for detecting the presence of a severe lesion within the group that received angiography. A combined criterion including any ECG pathology showed 100% sensitivity and negative predictive value, however a low specificity and positive predictive value.

Conclusion: In the cohort investigated, ST elevation on ECG is not a sensitive enough screening test to determine whether OHCA patients have coronary stenosis as the likely cause of their arrest, and subsequently more investigation into whether screening with a combined ECG criterion would be more accurate, or whether all patients should receive angiography routinely following OHCA is needed.

HONOURS PROJECTS

Student: Dominic Vickers

Project: Derivation of haemodynamic values in patients with continuous flow ventricular assist devices

Supervisor: Professor Christopher Hayward

Accurate knowledge of haemodynamic values in patients with continuous flow ventricular assist devices (cf-VADs) is vital to allow optimal cardiac output and to minimise the risk of complications. Traditional haemodynamic measurement methods for pulmonary capillary wedge pressure (PCWP) and blood pressure (BP) are limited in patients with cf-VADs. This study aimed to derive PCWP and BP values in patients with cf-VADs using available HeartWare HVAD pump parameters.

Student Name: Tan Wee Jun Hendra Irawan

Project Name: The Detection of Myocardial Interstitial Expansion in Cardiomyopathy by Cardiovascular Magnetic Resonance.

Supervisor: Dr Andrew Jabbour

Cardiac magnetic resonance (CMR) imaging has been established as a reliable and accurate technique for assessment of the heart, proving superior to other non-invasive imaging modalities such as the echocardiography. Rapid innovations in CMR now permit the acquisition of quantitative measures of myocardial and blood T1 and T2 via novel T1 and T2 mapping sequences. These new sequences are able to reliably detect myocardial interstitial expansion in various cardiomyopathies but require further validation. This project aims to contribute to the validation of these new techniques by showing that T1 and T2 mapping sequences are able to reliably differentiate between healthy and diffusely diseased myocardium in three model groups, hypertrophic cardiomyopathy (HCM), dilated cardiomyopathy (DCM) and cardiac amyloidosis.

Student: Ashleigh Xie

Project: The Use of a Blood-based Mock Extracorporeal Membrane Oxygenation Circuit to Assess Recirculation and Cerebral Perfusion

Supervisor: Associate Professor Kumud Dhital

Extracorporeal membrane oxygenation (ECMO) is a form of mechanical heart and/or lung support, used to treat life-threatening cardiac and respiratory failure in adults. Interest in ECMO has risen substantially over recent years, due to accumulating evidence from randomised trials, studies from the H1N1 influenza epidemic of 2009-2010, and considerable technological advances. Subsequently, impressive survival rates have been demonstrated for this high-risk, high-mortality patient population when treated with ECMO. However, despite its increasing uptake in centres worldwide, the evidence base for ECMO use in adults remains far from adequate. In particular, basic questions regarding the true safety and efficacy of this evolving technology have not been well investigated, and current usage of ECMO is often largely based on anecdotal or institutional experience.

There are two main types of ECMO, veno-venous and veno-arterial, each with specific problems. In veno-venous ECMO, recirculation of infused oxygenated blood is the main limiting factor of systemic oxygen delivery to the patient. In veno-arterial ECMO, cerebral hypoxia is thought to play a key role in devastating neurological complications, yet this pathophysiological mechanism has been poorly investigated in adults. The aims of the present study were therefore two-fold. Firstly, it used a mock circulation loop (MCL) with animal blood to compare different cannulation strategies for reducing recirculation in adults on veno-venous ECMO. To date, no study has performed such a comparison, either in vitro or in vivo. Secondly, it investigated a potential correlation between cardiac output and cerebral oxygenation during veno-arterial ECMO, on the MCL.

Student: Kimberly-Anne Tan

Project: Lung cancer outcomes in patients undergoing cardiopulmonary bypass prior to lung resection

Supervisors: Associate Professor Kumud Dhital and Dr Emily Stone

Patients being worked up for cardiac surgery are infrequently found to have concomitant operable lung cancer. The cardiac surgery is usually performed before or together with lung resection, and is typically done under cardiopulmonary bypass (CPB), although some coronary artery bypass procedures may be carried out without CPB. There has been suggestion in the literature that use of CPB may increase risk of tumour progression.

AIMS: To evaluate lung cancer outcomes in cases of cardiac surgery on CPB followed by lung resection at St. Vincent's Hospital.

METHODS: Cases of lung cancer resection performed subsequent to coronary artery grafting under CPB were identified retrospectively from the local 2000-2014 cardiothoracic database. A literature search identified similar published cases. These cases were compared with local cases of lung resection without exposure to CPB.

RESULTS: Patients in our study group (n=11) had poorer survival than that of the comparison group (n=69) (p<0.0001). 2-year survival was 64% and 92%, while 5-year survival was 42% and 92% for our study and comparison groups respectively. Median survival time of our study group was 57 months. Our study group compared favourably with published Stage I-II NSCLC survival rates.

CONCLUSIONS: Although patients in our study group had poorer survival than patients who had lung cancer resection alone, reasonable postoperative prognosis suggests that it is worthwhile for patients presenting with surgically-indicated concomitant disease to undergo CPB surgery prior to lung resection.

Student: Neera Jain

Project: Evaluation of left ventricular assist pump function and heart function during daily physical activity

Supervisors: Professor Chris Hayward

Long-term support with continuous-flow left ventricular assist devices is increasing in patients with advanced heart failure, due to the shortage of available donor hearts. Diurnal fluctuations in continuous-flow ventricular assist pump output have been well-described, however the mechanisms driving these flow changes have not been studied in detail. In particular, the contributions of ventricular contractility, preload and aortic valve opening to flow variation is unclear. Our study aimed to characterise the contributions

of these factors to pump output variations on a minute-to-minute basis utilising recently developed non-invasive diagnostic indices.

Student: Deborah Anna-May Barber

Project: MIC-1/GDF15 as Predictor of Colonic Adenomas (MAPCA) study

Supervisor: Associate Professor Mark Danta and Associate Professor David Brown

Macrophage inhibitory cytokine-1 (MIC-1/GDF15) has been identified as a potential biomarker for precancerous colonic polyps that may radically improve population screening for colorectal cancer by addressing the health and economic limitations of current techniques. Previous research has demonstrated the correlation between heightened Macrophage inhibitory cytokine-1 (MIC-1/GDF15) serum levels and the presence of precancerous adenomatous colonic polyps. By undertaking a prospective cohort study, the current research provides a unique theoretical contribution by evaluating the intra-individual variation in the level of the biomarker in pre and post-endoscopic samples. The study aim was to determine whether circulating MIC-1/GDF15 serum concentrations are higher in the presence of adenomatous colonic polyps and whether the level of the biomarker decreases after the excision of pre-cancerous polyps. This research intends to advance the clinical application of MIC-1/GDF15 by establishing whether the systemic cytokine can accurately predict colonic pathology as a potential future screening tool for colonic polyp surveillance.



A/Professor Mark Danta

POST GRADUATE REPORT

St Vincent's Clinical School (SVCS) continues to contribute to the growing post-graduate research at UNSW. The Kinghorn Cancer Centre, a joint venture between St Vincent's Hospital and the Garvan Institute, is now providing an integrated 'bench to bedside' approach to cancer medicine, particularly in the field of genetics, which has strengthened our translational research and post-graduate studies .

UNSW received a total of \$65.8 million in National Health and Medical Research Council (NHMRC) funding to commence in 2015, including \$29 million for 40 new project grants. This was down on the \$88 million funding in 2014. Many of these grants are affiliated with the St Vincent's Clinical School, particularly through the Garvan Institute and Victor Chang Cardiac Research Institute.

There has been increasing uptake of the thesis by publication approach, which is especially relevant in the Medical Faculty. A significant number of students achieve at least three first author publications which qualifies for submission by publication. There is also ongoing move to online administration of the postgraduate students, encompassing admission, candidature, examination and completion. Hopefully, this will be fully integrated in the next year. This will include the scholarship process, which may be assessed at the outset of the application. There has also been an increase in the number of Tuition Free Scholarships (TFS) on offer by UNSW. These scholarships for international students provide a waiver of UNSW fees, however, the living stipend for the student must be provided by their supervisor.

I would like to thank the other Post Graduate Coordinators, specifically, Dr Alessandra Bray (Garvan Institute), Professor Boris Martinec (Victor Chang Cardiac Research Institute), and Dr Kersten Koelsch (SVH Applied Medical Research), all post-graduate students and supervisors for an excellent year. Hopefully, 2015 will provide a clear picture of tertiary education in Australia.

SUCCESSFUL GRANT APPLICATIONS

UNSW

PS37017 – Early Career Research Fund awarded to Associate Professor Mark Danta for CEMOR-HIV/IBD for \$50,200.

NHMRC Grant (administered by Garvan Institute) awarded to Dr C King and Associate Professor Mark Danta for “CCR9+ Th cells”, from 01-Jan-2014 to 31-Dec-2016 for \$705,558.00.

RG142315 - NHMRC Program Grant awarded to Professor Ric Day and colleagues for \$10.9M over 5years for “Creating safe, effective systems of care: the translational challenge”.

RG133596 - Multiple Sclerosis Research Australia / Research Grant awarded to Associate Professor David Brown for “Macrophage inhibitory cytokine-1 (MIC-1/GDF15): a new treatment for MS? commencing “01-Jan-2014 to 31-Dec-2016 for \$250,000.

RG132839 – Australian Research Centre (DECRA) awarded to Dr Lawrence Lee for “Artificial synthesis of bacteria’s molecular syringe, the type III secretion system” commencing 01-Jan-2014 to 31-Dec-2016 for \$395,220.

RG133770 – Ramaciotti Australia Foundation Grant awarded to Dr Lawrence Lee for “A synthetic biology approach to the study of bacteria’s molecular syringe: the type III secretion system” commencing 01-Jan-2014 to 31-Dec-2014 for \$75,000.

RG133163 - Australian Research Council / Discovery Project awarded to Associate Professor Daniel Christ for “Structural studies of a reconstructed primordial antigen receptor” commencing 01-Jan-2014 to 31-Dec-2017 for \$400,000.

RG124632 - NHMRC / Project Grant awarded to Associate Professor David Brown for “DCs and CEBPδ in neuroinflammation and autoimmunity” commencing 01-Jan-2014 to 31-Dec-2016 for \$557,562.

RG124630 – NHMRC / Project Grant awarded to Professor Sam Breit for “Mechanisms underlying MIC-1/GDF15 induced anorexia” commencing 01-Jan-2014 to 31-Dec-2016 for \$621,894.

RG134719 - University of New South Wales / Go8 - Germany Joint Research Cooperation Scheme (DAAD) awarded to Professor Boris Martinac for “Mechanotransduction in cardiac hypertrophy using a novel isotropic cell stretcher” commencing 01-Oct-2014 to 31-Dec-2015 for \$20,000.

RG134795 – University of New South Wales / GoldStar Award awarded to Professor Richard Harvey for Non-coding RNAs in heart development commencing 01-Jan-2014 to 31-Dec-2014 for \$40,000.

ST VINCENT’S CLINIC FOUNDATION

SVPHS Ladies’ Committee Sr Mary Bernice Research Grant – \$100,000 awarded to Associate Professor Diane Fatkin for “A novel zebrafish model of dilated cardiomyopathy”.

Adult Stem Cell Research Grant – \$100,000 awarded to Professor David Ma for “Targeting of Leukaemic stem cells by anti-microRNAs to treat acute myeloid Leukaemia”.

Tancred Research Grant – \$50,000 awarded to Dr John Moore for “Molecular determinants of Haematopoietic Stem Cell Ageing and Rheumatoid Arthritis Pathogenesis”.

K&A Collins Cancer Grant – \$50,000 awarded to Professor Andrew Carr for “Understanding the immune mechanisms underlying spontaneous regression of high-grade anal squamous intraepithelial lesions”.

Thelma Greig Cancer Grant – \$50,000 awarded to Associate Professor Reginald Lord for “DNA methylation biomarkers for Barrett’s oesophagus and oesophageal adenocarcinoma”.

Di Boyd Cancer Grant – \$30,000 awarded to Dr Helen Tao for “Role of ETS-related gene (ERG) in the pathogenesis of transient myeloproliferative disease and leukaemia in human Trisomy21”.

Combined Froulop Research & Annual Grant – \$50,000 awarded to Associate Professor Catherine Suter for “Fetal programming of cardiovascular disease risk”.

Annual Grant 3 – \$30,000 awarded to Dr Priya Nair for “Vitamin D dosing study in Intensive Care Unit (ICU) patients with the Systemic Inflammatory Response Syndrome (SIRS)”.

Annual Grant 4 – \$30,000 awarded to Associate Professor Deborah Marriott for “Bad bugs need well administered drugs”.

UNSW CONJOINT STAFF APPOINTEES

AS OF 31 DECEMBER 2014

PROFESSOR

Basten, Antony
Biden, Trevor
Breit, Samuel
Brew, Bruce
Brien, Jo-anne
Brink, Robert
Campbell, Lesley
Carr, Andrew
Chisholm, Donald
Clark, Susan

Cohen, Milton
Cooney, Gregory
Croucher, Peter
Daly, Roger
Dunwoodie, Sally
Eisman, John
Epstein, Richard
Fatkin, Diane
Feneley, Michael
Glanville, Allan

Goodnow, Christopher
Hayward, Christopher
Herzog, Herbert
James, David
Keogh, Anne
Ma, David
Macdonald, Peter
Martinac, Boris
Mattick, John
Musgrove, Elizabeth

Ormandy, Christopher
Petros, Peter
Rogers, Michael
Samaras, Katherine
Shine, John
Sprent, Jonathon
Symonds, Geoffrey
Thomas, David
Vandenberg, Jamie
Watkins, Neil

ASSOCIATE PROFESSOR

Bester, Lourens
Brennan, Nick
Bryant, David
Center, Jackie
Chye, Richard
Connolly, William Bruce
Cooper, Antony
Courtenay, Brett
Dhital, Kumud
Dinger, Marcel
Dodds, Anthony
Emmett, Louise
Ezard, Nadine
Faux, Steven
Freund, Judith
Fulde, Gordian

Grabs, Anthony
Graham, Antony
Geenfield, Jerry
Grey, Shane
Grygiel, John
Gunton, Jenny
Harvey, Richard
Haylen, Bernard
Hillman, Richard
Holloway, Cameron
Horvath, Lisa
Jabbour, Andrew
Jones, Graham
Kennedy, Michael
Kotlyar, Eugene
Kuchar, Dennis

Laybutt, Ross
Lee, Lynette
Lord, Reginald
Markus, Romesh
Marriott, Deborah
Moore, John
Morey, Adrienne
Muller, David
Neil, Michael
Norris, Ross
Ortiz, Michael
Parsi, Kurosh
Pendlebury, Susan
Plit, Marshall
Pocock, Nicholas
Raftos, John

Roe, Justin
Schembri, Anthony
Sevastos, Jacob
Simons, Leon
Spratt, Phillip
Stricker, Phillip
Subbiah, Rajesh
Suter, Catherine
Tangye, Stuart
Tobin, Bernadette
Viardot, Alexander
Xia, Yu (Brandon)
Yates, Deborah

SENIOR LECTURER

Aldred, Russell
Al-Soufi, Suhel
Baldock, Paul
Banerjee, Dev
Barry, Guy
Batten, Marcel
Berry, Melinda
Beveridge, Sandy
Biggs, Nigel
Birzniece, Vita
Blackburn, James
Brennan, Nicholas
Burgess, Andrew
Buscher, Hergen
Caldon, Catherine Elizabeth
Chaganti, Joga Rao
Chan, Tyani
Chan, Eva
Chen, Wendy
Christ, Daniel
Chtanova, Tatyana
Cowley, Mark
Cropley, Jennifer
Croucher, David
Darveniza, Paul

Dear, Rachel
Duffy, Martin
Ende, David
Fallon, Anne
Feller, Robert
Fenton-Lee, Douglas
Field, Andrew
Finckh, Andrew
Foltyn, Peter
Frommer, Donald
Garrick, Ray
Girgis, Lalia
Groza, Tudor
Hargreaves, Warren
Harper, Elizabeth
Harvey, Rhonda
Havryk, Adrian
Hesselson, Daniel
Hill, Adam
Ho, Wing Kei (Joshua)
Hughes, William
Iismaa, Siri
Imtiaz, Mohammad
Joseph, Joanne
Kikuchi, Kazu

King, Cecile
Kohonen-Corish, Maja
Lamaro, Vincent
Lee, Paul
Lin, Shu
Lin, Yong
Maghzal, Ghassan
Malouf, Monique
Martin, Gisela
Matthews, Steve
Mercer, Timothy
Mead, Scott
Milliken, Samuel
Mora, Fatima
Mozer, Roslyn
Nair, Priya
Neely, Gregory
Nicholls, Mark
Nikolova-Krstevski, Vesna
Oakes, Samantha
O'Neill, John
O'Sullivan, Gregory
O'Toole, Sandra
Owe-Young, Robert
Palendira, Umaimainthan

Parker, Shari
Pell, Malcolm
Perry, Matthew
Petersen, Desiree
Phan, Tri
Preis, Paul
Rooman, Ilse
Roy, David
Samarasinghe, Iromi
Sammel, Neville
Saunders, Darren
Schmitz-peiffer, Carsten
Schofield, Peter
Silverstone, Elizabeth
Sparrow, Duncan
Steele, Timothy
Stirzaker, Clare
Stock, Daniela
Stone, Emily
Sun, Clive
Sutton, Ian
Suzuki, Kazuo
Swarbrick, Alexander
Taberlay, Phillipa
Tao, Helen

SENIOR LECTURER CONTINUED

Tao, Jiang
Timpson, Paul
Tisch, Stephen
Tsai, Vicky Wang-Wei

Vissel, Bryce
Walker, Bruce
Watts, Colin
Webster, Kylie

Whitfield, Margot
Wilson, Stephanie
Wu, Jianmin
Yu, Ze Yan (Jane)

Yuen, Carlo
Zaunders, John

LECTURER

Alford, Judy
Ali, Naveid
Asli, Naisana Seyed
Baker, Matthew
Balaji, Poornima
Barnett, Yael
Battle, Andrew
Ben-Menachem, Erez
Boslem, Ebru
Bosman, Alexis
Bouveret, Romaric
Bray, Alessandra
Brooke, Kathryn
Buske, Fabian
Cazet, Aurelie
Chapman, Gavin
Chaston, Jessica
Chow, Fiona
Clancy, Jennifer
Cole, Adam
Connor, David
Costin, Monique
Cotterell, James
Cranfield, Charles
Cruz, Monique
Deenick, Elissa
Doyle, Kharen
Eaton, Sally
Edwards, Emily

Flanagan, Sean
Franklin, Andrew
Fulde, Sascha
Gallego-Ortega, David
Gardam, Sandra
Gatto, Dominique
Giannoulatou, Eleni
Gill, Anthony
Gilroy, Nicole
Giry-Laterriere, Marc
Gloss, Brian
Granger, Emily
Green, Jessica
Guennewig, Boris
Hesselson, Stephanie
Higgs, Andrew
Hollway, Georgina
Hsu, Eugene
Humphreys, David
Husaini, Yasmin
Ibrahim, Karim
Jahromi, Shahrzad
Khoo, Melissa
Khuong, Thang Manh
King, Michael
Kumaradevan, Nirmala
Lau, Man Tat
Lee, Lawrence
Lee, Hong Ching

Leow, Liang Joo
Leung, Julie
Liew, Chu Kong
Liu, Sue Min
Loi, To Ha
Ma, Cindy
Macaulay, Philip
Mann, Stefan
Maruno, Kevin
McCabe, Mark
McCormack, Anne
McDonald, Michelle
Milner, Brad
Mohammad, Mohammad
Molloy, Tim
Moran-Jones, Kim
Muniak, Michael
Nair, Radhika
Nair, Shalima Sasidharan
Naylor, Matthew
Ng, Chai (Andy)
Nguyen, Akira
Nicholls, Gary
Nikolic, Iva
Omari, Abdullah
Owen, Gareth
Paddon, Vanessa
Pajic, Marina
Palma, Catalina

Pile, Alex
Rodgers, Craig
Rudham, Sam
Schonrock, Nicole
Scott, Sean
Shi, Yanchuan
Singh, Reena
Smith, Nicola
Smith, Martin
Southwell-Keely, James
Stoekli, Jacqueline
Stone, Andrew
Szekely, David
Tefany, Frances
Trickett, Annette
Tsang, Clement
Vaqueirinho de pinho, Andreia
Vertzyas, Nick
Vu, Thi Thanh
Warton, Kristina
Watanabe, Yuriko
Williams, David
Winder, Mark
Wu, Jane
Zotenko, Elena
Zhang, Lei

ASSOCIATE LECTURER

Achinger-Kawecka, Joanna
Au Pui-Yan, Cheryl
Baker, Richard
Butler, Margaret
Bart, Nicole
Basyouny, Ziad
Berger, Aaron
Birch, Julia
Bradley, Stephen
Burne, Scott
Butterfield, Robin
Byrne, Niall
Campos, Pedro
Chauhan, Manisha
Cheng, Yen Szu
Cheung, Caran
Chew, Hong
Christie, Mary
Chroinin, Danielle
Chu, Kwan
Chung, Jason
Connellan, Mark
Connolly, Elizabeth
Crocket, Robert
Dannaway, Jason
Dantanarayana, Nandu
Deng, Niantao
Edwards, Gillian

Elsworth, Ben
Farnham, Nell
Gimblett, Meredith
Goh, Sean
Griffin, Orna
Hannaford, Patricia
Haydon, Nicholas
Herrmann, David
Howey, Stephen
Hoy, Elizabeth
Hu, Sharon
Hungerford, Sara
Jacombs, Anita
Johnston, Christopher
Junankar, Simon
Karmali, Alia
Kelly, Shane
Khoo, Oliver
Kilpatrick, Fiona
Kim, Ryan
Kumarasinghe, Gayathri
Lasschuit, Joel
Lavee, Orly
Lee, Hugo (Ming-Han)
Lee, William
Loh, Tze Ling
Loh, Kim
Lukins, Timothy

Mamun, Abdul
Manders, Peter
Markowsky, Lorie
McGrath-Cadell, Lucy
Milliken, Eliza
Mladenova, Dessislava
Moonen, Avalon
Moore, Helen
Moran, Neil
Morris, Katrina
Muir, Christopher
Murambi, Ronald
Namasivayam, Mayoaran
Nee, Rory
O'Connell, Brian
Ooi, Yoon
Ostrowski, Kevin
Pandya, Keval
Parthasarathi, Krishnan
Patterson, Kate
Pearson, Gemma
Pudipeddi, Aviv
Rattan, Arti
Rigby, Amy
Sachdev, Sonal
Sacks, Peta
Samadi, Behnoosh
Shaw, Nicholas

Shepherd, Felicity
Shivam, Aruna
Scheuer, Sarah
Sheilds, Melissa
Sido (nee Singh), Tanya
Singla, Aneesh
Skidmore, Sarah
Small, Timothy
Smialkowski, Ania
Song, Ning
Sundling, Christopher
Sutherland, Emily
Tai, Patrick
Tassie, Benjamin
Tilley, Daniel
Ting, Francis
Tonks, Katherine
Tran, Minh
Tran, Thach
Vijayan, Dipi
Walker, Stephen
Wang, Louie
Wang, Qiaoping
Webb, Nicholas
Williams, Phoebe
Wilson, Brooke
Wing-Lun, Edwina
Xu, Jessica

CLINICAL SCHOOL STAFF MEMBERS



Professor Allan Spigelman

Head of School & Professor of Surgery

Commenced: 2006

Specialty: Surgical Oncology

Research Interests: Cancer Care; Clinical Governance/Patient Safety/Quality of Care/Risk Management; Surgery; Cancer Genetics



Professor Terry Campbell

Senior Associate Dean, Faculty of Medicine & Professor of Medicine,

Commenced: 1998

Specialty: Cardiology

Research Interests: Cardiac ion channels; Antiarrhythmic drugs; Cardiac Arrhythmias; Cardiac pharmacology



Professor Ric Day

Professor of Clinical Pharmacology

Commenced: 1990

Specialties: Clinical Pharmacology & Rheumatology

Research Interests: Inflammatory rheumatic diseases; adverse drug reactions



Professor Jane Ingham

Professor of Palliative Care

Director, Cunningham Centre of Palliative Care

Commenced: 2007

Specialty: Palliative Care

Research Interests: Palliative Care



A/Professor Eva Segelov

Associate Professor of Medicine

Commenced: 2004

Specialty: Medical Oncology

Research Interests: Oncology clinical trials; quality of life; medical education



A/Professor Jane McCrohon

Associate Professor of Medicine

Commenced: 2008

Specialty: Cardiology & Medical Imaging

Research Interests: Cardiac imaging (MR, CT and ultrasound); detection of cardiotoxicity



A/Professor Bill Sewell

Associate Professor of Immunology
Commenced: 1998
Specialty: Immunology
Research Interests: Allergic disease; Novel markers in leukaemia and lymphoma.



Dr Anthony Chambers

Senior Lecturer in Surgery
Commenced: 2010
Specialty: Surgical Oncology
Research Interests: Breasts, Thyroid Cancer, Endocrine Tumors



Dr Russell Clark

Senior Lecturer in Medicine
Commenced: 2009
Specialty: Geriatrics



A/Professor Mark Danta

Associate Professor of Medicine
Commenced: 2006
Specialty: Gastroenterology
Research Interests: Viral Hepatitis; Hepatitis HIV co-infection



Dr Darren Gold

Director of Medical Student Education; Senior Lecturer in Surgery
Commenced: 2007
Specialty: Colorectal Surgery
Research Interests: Proctology; pelvic floor disorders



Dr Rohan Gett

Lecturer in Surgery
Commenced: 2006
Specialty: Colorectal Surgery
Research Interests: Colorectal Surgery

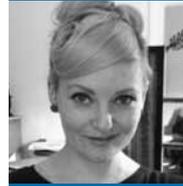
ADMINISTRATIVE STAFF



Mrs Melinda Gamulin
Clinical School Manager



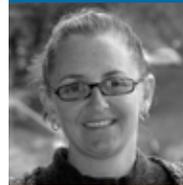
Ms Naomi Esselbrugge
Administrative Officer



Ms Julee Pope
Administrative Assistant



Ms Thuy Huynh
Administrative Officer (Clinical Pharmacology)



Ms Cassie Shearer
Administrative Assistant (Surgical Professorial Unit)



Ms Linda Dowell
Administrative Assistant (Medical Professorial Unit)

2015 TEACHING & EXAMINATION OVERVIEW

2015 TERM DATES

Phase 1

Teaching Period 1:
Recess:
Teaching Period 2:
Recess:
Teaching Period 3:
Recess:
Teaching Period 4:

Phase 2

Semester 1: 2 March - 26 June
Recess: 3 April - 10 April
Recess: 29 June - 17 July
Semester 2: 20 July - 16 October
Recess: 31 October - 4 September

Phase 3

Summer Teaching Period: 12 January - 6 March
Teaching Period 1: 9 March - 8 May
Recess: 3 April - 10 April
Teaching Period 2: 11 May - 3 July
Recess: 6 July - 10 July
Teaching Period 3: 13 July - 4 September
Recess: 7 September - 11 September
Teaching Period 4: 14 September - 6 November
PRINT: 12 October - 20 November

EXAMINATIONS

Phase 3

Clinical: 16 & 17 September
Oral: 22 & 23 September
Portfolio: 29 & 30 September

Phase 2

24 & 25 September

Phase 1

2 & 3 December



UNSW
AUSTRALIA

St Vincent's
Clinical School
Medicine

St Vincent's Clinical School (UNSW)
St Vincent's Hospital
Level 5, deLacy Building
Darlinghurst NSW 2010
T +61 2 8382 2023
F +61 2 8383 3229
E stvc@unsw.edu.au
<http://stvc.med.unsw.edu.au>