



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**

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2 students with Dr Clive Sun; Phase 3  
students with Dr Rohan Gett

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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.



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 conjoins 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!



Dr Peta Sacks with Prof  
Allan Spigelman

## AWARDS & ACKNOWLEDGEMENTS

### 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.

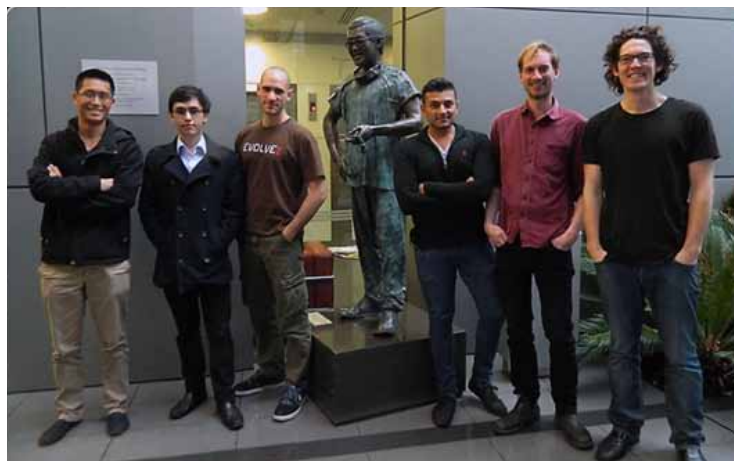
Transplant Units until now have relied solely on donor hearts from brain-dead patients whose hearts are still beating.

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 Juliee or Naomi at [stvcsc@unsw.edu.au](mailto:stvcsc@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.

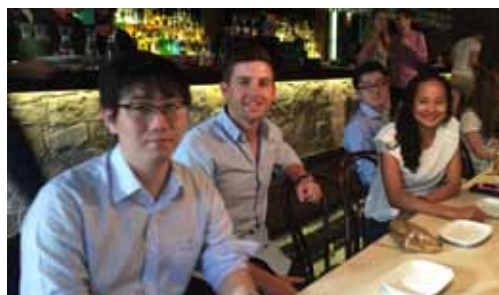
In contrast, medicine ward rounds were lengthy, but it gave us a great opportunity to become familiar with our patients and establish rapport. This was one of the most enjoyable parts of the term, along with the rewarding experience of seeing our patients get better. Much time was also spent with the 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- $\alpha$ , 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: Gemma 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  $\geq 1$  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 ( $\pm 193.37$ ).

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  
Guntton, 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  
Foltyin, 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  
Steel, 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-Latterriere, 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  
Stoeckli, Jacqueline  
Stone, Andrew  
Szekely, David  
Tefany, Frances  
Trickett, Annette  
Tsang, Clement  
Vaquerinho 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, Aresh  
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, Dipti  
Walker, Stephen  
Wang, Louis  
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**

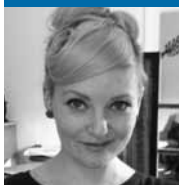
Clinical School  
Manager



**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





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