



UNSW  
AUSTRALIA

# 2013 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**

**Design & Layout:** Naomi Esselbrugge

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**Cover Images:** Phase 2 students in the Patient Safety Simulation Centre with Ms Alex Pile;  
2013 Graduating Class and Clinical School staff members.

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Professor Allan Spigelman  
Clinical Associate Dean

## INTRODUCTION

This year saw the conduct of an external review of the Faculty, the findings of which confirmed that our School complies with many of the recommendations made that are relevant to the clinical schools. Our productive collaborative relationship with the Garvan Institute of Medical Research is but one example.

In 2013, the St Vincent's Hospital Clinical School provided training for approximately 350 medical students in all years of the undergraduate course, 109 postgraduate students and over 50 elective students from other countries and states. Our teaching and research staff consists of clinical academics plus 362 conjoint appointees.

The Clinical School provides support for the Hospital's Medical Grand Rounds. I tis planned to increase the profile of this meeting further in the future, making it a major forum for multidisciplinary learning for staff and students alike.

On behalf of our medical students, I extend my personal thanks to each and every one of our teachers and researchers, as well as to those patients who voluntarily agree to be seen by our students, and to the management of St Vincent's Public Hospital, St Vincent's Private Hospital, St Vincent's Clinic and Sacred Heart Health Service for their contributions to out students education. With this help, patients of the future should be assured of the best possible health outcomes.

A handwritten signature in black ink, appearing to read 'Allan Spigelman'.



# FROM THE DIRECTOR OF MEDICAL STUDENT EDUCATION

A/Professor Eva Segelov  
Director of Medical Student Education

It is a pleasure to write this, although with nostalgia, for the final time, as I have recently stepped down from the position of Director of Medical Student Education at St Vincent's Clinical School. My nine years here followed five years in this role at SWS Clinical School. The position at SVCS was initially established by Professor Terry Campbell specifically to bring in the "New Medicine Program", the new curriculum which involved a fundamental change in philosophy and interaction with our medical students. The curriculum and all its graduate capabilities and learning objectives (and complex scheduling and examinations!) is now well and truly embedded. Therefore it is an excellent time to hand on the role to a different academic, in keeping with best practice for continual renewal and replacement with fresh ideas and different approaches. I am proud of what we together have been able to achieve at St Vincent's Clinical School, with its excellent reputation for clinical teaching. Our partnerships with our allied health colleagues in projects and continuing education has been a highlight, and I thank all of the many people I have engaged with over the years, and in particular the Heads of School Professor Campbell then Professor Spigelman for their support for the DMSE role. I also thank my academic colleagues for their support, and above all the wonderful clinical school administration staff, who initiate as well as implement many ideas and novel educational opportunities for students.

I will of course be continuing as a clinical academic at St Vincent's Clinical School. I agreed to hand on the DMSE role in order to focus more on my research, with my international and national colorectal clinical trials and all the translational work stemming from these now in full swing.



## FACULTY & UNIVERSITY NEWS

Professor Terry Campbell  
Senior Associate Dean

Financial issues remained prominent across UNSW during 2013. The two major sources of income to the University (payments for government funded student places and research block grant for research infrastructure) are being reduced by 2% in 2014 and 3.25% from 2015.

On a more positive note, Medicine had an excellent year in research grant outcomes with six new program grants (out of six applications), due to commence in January 2014 and in terms of overall new NHMRC funding to universities, UNSW has moved into fourth place behind the Universities of Melbourne, Sydney and Queensland, with well over \$100 million in NHMRC income for 2014. Nearly all of this flows through Medicine.

The renovated and expanded Wallace Wurth Building, on the Kensington campus has partially re-opened. There will be a formal reopening in May 2014. The top two floors of the complex will form the new home for the Kirby Institute. The clinical components of the Kirby, including their clinical trials activity, will remain on the Darlinghurst campus.

In my new role as Director of Research at St Vincent's Hospital I have finalised the implementation of the Darlinghurst Research Precinct as a formal Research Hub under Ministry of Health guidelines. A funding model for research on the St Vincent's campus will be rolled out over the coming months.

Finally I would like to take this opportunity to congratulate Philip Cunningham and Alex Viardot and their committees for the excellent work they did in producing an outstanding Research Week in early September this year.



# ADMINISTRATION UPDATE

Melinda Gamulin  
Clinical School Manager

2013 has been quite a busy year for the St Vincent's Clinical School.

I would like to welcome our new administrative assistant, Ms Linda Dowell, she replaces Kate Rowe (Executive Assistant, MPU) who left the school in June. Welcome Linda.

The School could not function without the support of our 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 2014!

A handwritten signature in cursive script, which appears to read 'mgamulin', written in dark ink on a light background.

# AWARDS & ACKNOWLEDGEMENTS



## 2013 CLINICAL SCHOOL TUTORS OF THE YEAR

**JMO Tutors of the Year:** Dr Dan Tilley and Dr Ben Tassie

**RMO Tutor of the Year:** Dr Behnoosh Samadi

**Registrar Tutor of the Year:** Dr Nikki Bart

**Consultant Tutor of the Year (SVH):** A/Prof Nick Brennan

**Consultant Tutor of the Year (SVPH/SVC):** Dr Rohan Gett



Images (counter-clockwise from top): Dr Ben Tassie with Prof Spigelman, Dr Dan Tilley, Dr Behnoosh Samadi with Prof Spigelman, Dr Nikki Bart, Dr Rohan Gett and A/Prof Nick Brennan





## 2013 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: Peta-Lee Sacks.

**Doug Tracy Prize for Surgery** - Best performance in Surgery based on course results and the Phase 3 Integrated Clinical Examination: Peta-Lee Sacks.

**John Hickie Prize for Medicine** - Best performance in Medicine based on course results and the Phase 3 Integrated Clinical Examination: Peta-Lee Sacks.

**Independent Learning Project/Honours Grand Rounds Presentation** - Best presentation at the 2013 ILP/Honours Grand Rounds: Karthik Venkatesh, for his presentation on Cortisol levels in ECMO patients and their correlation with inotropic support and outcomes.

**Independent Learning Project Prize** – Based on the 2012 Projects: Benjamin Wan for his project on Assessing the lung's capacity to adequately oxygenate with reversal of pulmonary blood flow, under the supervision of Dr Kumud Dhital.



Images (clockwise from top): Peta-Lee Sacks, Karthik Venkatesh with Prof Spigelman and Benjamin Wan

## 2013 CLINICAL SCHOOL STAFF AWARDS

**Publication Prize:** Professor Ric Day

**Research Prize:** A/Professor David Brown

**Community Service Prize:** Dr Darren Gold



Images (left to right): Dr Darren Gold, with Prof Spigelman, Prof Ric Day, A/Prof David Brown with Prof Spigelman

## 2013 DEANS AWARDS - DEANS LIST

Peta-Lee Sacks  
Sean-Luke Goh

# HIGHLIGHTS & EVENTS

## ANNUAL DOCTORS VS STUDENTS SOCCER MATCH



On an absolutely beautiful sunny day on Friday 3rd May, 2013 for the Annual Doctors v Students soccer match this year was held at a new venue. Sydney Grammar School kindly gave permission for the use of their ground and amenities at Weigall Oval. The pitch was lush green and the conditions were perfect – by far the best playing conditions in this tournament of champions.

The Doctors (Interns, Consultants, Researchers and Clinical Academics) had plenty of substitutes this year while the student numbers were augmented by grade soccer player Cassandra Shearer from the Clinical School. The display of talent for the Doctors this year was evident with some excellent displays of skill, including exceptional goalkeeping.

Not long into the match the Doctors were first to score from a fantastic lead up from the midfield to the strikers and a great chip over the keeper to score. The Students had some very fast strikers up front and the Doctors were caught napping (not quite literally) - the students levelling the score 1-1.

The skills of both teams saw the play go from either end of the field. With the Doctors having five substitutes and the students with none the heat was taking its toll. The Doctors captain Mark Danta scored a brilliant header to make the score 2-1. The Students then broke away up-field and with the Doctors defence caught the Students and scored to level the score at 2-2.

At third quarter time the Doctors mentor/coach Professor Allan Spigelman entered the arena to spur on the team to finally win the trophy for the first time. In doing so he had to mark his PA (Cassandra) who was fit and fast but she promised not to outrun or tackle the Professor, as it was made clear that this could be a career limiting move! The Doctors scored from a fantastic corner which David Bell volleyed straight past the keeper, to make the score 3-2.



The doctors were eventual winners with a late goal just before full time by Elias Moisisdis to make the score 4-2, with a very happy captain Mark Danta accepting the trophy from Professor Spigelman.

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

Thanks also to A/Prof Steven Faux for refereeing the match. Special mention also goes to Bob Morris from SVH Transport Department for providing strapping to the players and for the First Aid support. It was comforting, to see his ambulance on hand as Bob was very busy this year which saw some students develop ramps.

Scorers from the Doctors team were: Elias Moisisdis, David Bell, Mark Danta, Peter Hanley

Scorers from the Students team were: Nick Fitzgerald, Rohan McLachlan



# COMMUNITY PROJECTS



This year we continued with one of our Community Projects, : Living with Paraplegia and also commenced a new one, Gorman & Tierney Houses.

## LIVING WITH PARAPLEGIA

This year the Living with Paraplegia team ran two highly successful bake sales to help raise funds for the project. The success of the event, not only was shown by the funds raised, but also the interest from the hospital staff, visitors and patients who gained some awareness into the impact of paraplegia and spinal cord injuries, particularly in the developing world.

We look forward to continuing this project in 2014.



## 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 continue to build it and further develop the relationship between the Houses and the Clinical School to offer students further opportunities to be engaged with the community.

### 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](mailto:stvcs@unsw.edu.au)

# ST VINCENTS HOSPITAL



St Vincent's Hospital recently commenced celebrations of the 175 year anniversary of the arrival of the Sisters of Charity - the first women's religious order in Australia.

The five Sisters of Charity arrived in Port Jackson on the last day of 1838. They were dispatched from Ireland in response to an invitation from Archbishop Polding by the Congregation's foundress Mary Aikenhead in response to her vision and practical enthusiasm for the poor, and her realisation of the dire conditions that the convicts, aboriginals and settlers alike were experiencing in the new colony.

From these humble beginnings, the Sisters have today established themselves as one of the most significant healthcare providers in the not-for-profit sector and a major force in the Australian educational and welfare system – a testament to their Charism, Mission and Values.

On the St Vincent's Campus the mission and values of the Sisters remain as palpable today as they did when St Vincent's Hospital first opened its doors. While every day the Hospital's endeavours strive to support its mission of exceptional care and social justice, highlighted below are some of the specific areas in which the Campus has focussed particular attention.

Two important initiatives on the Campus launched last year recently celebrated their first anniversaries. The Kinghorn Cancer Centre – a partnership between Garvan and St Vincent's is already proving a major success story with patients, researchers and clinicians alike. We are already seeing some terrific collaborations and we hope that this will go from strength to strength – including the announcement by the Federal Government of \$5.5 million over 4 years to establish The Kinghorn Cancer Centre's National Prostate Cancer Research Centre.

It is twelve months since we opened Tierney House which provides the homeless with sub-acute medical care, including post-surgical recovery

and convalescence following an inpatient admission; stabilisation on treatment programs, and sub-acute care for individuals with mental health problems. Tierney House is facilitating collaboration in care planning between health specialties and other community agencies, as well as providing an assertive and holistic approach to generate more sustainable change to help break the cycle of homelessness.

Our facilities and research partners continue to make advances in medical research and ground-breaking treatment that are making a difference in people's lives, not just in Australia but around the world.

The Darlinghurst Campus collectively attracts one of the largest components of NH&MRC funding in the country. Given that Australia accounts for about 5% of the publications in the world's most prestigious biomedical journals, this gives you an idea of the gravitas that this Campus commands on the Australian biomedical landscape and beyond.

In an important development for the Campus' research endeavours, Professor Terry Campbell was this year appointed as the St Vincent's Director of Research. Terry brings with him many years of research expertise and will oversee the research precinct for St Vincent's Health Network. As well as driving our direct St Vincent's research activities, he is also responsible for fostering our many research partnerships to continue our proud history of focussing on research to improve patient outcomes.

In September, our national entity, St Vincent's Health Australia announced a major restructure to shift the Organisation from a regional structure towards a service-line structure with three divisions: Public Hospitals, Private Hospitals, Aged Care and Shared Services.

The changes are a continuation of the 2010 strategy when SVHA changed our governance model and established a single national SVHA board. The restructure will see a leaner operational model adopted, more closely aligned to our needs. Being divided along service lines will enable us to leverage our skills in a more unified and integrated way the new structure will enable us to continue and grow all the benefits of the co-location of the two hospitals on the one Campus.

We now have the opportunity for greater cooperation between St Vincent's Hospitals in Melbourne and Sydney. Both institutions are well established public entities with leading expertise in key clinical areas. We can better share knowledge and successes and together provide a strong national advocacy voice on key social and health policy issues.

As we celebrate the 175th anniversary of the Sisters' arrival in Australia, I am particularly mindful of the longstanding partnerships that we have formed along the way. Our longstanding relationship with the UNSW Clinical School is one of the most important ones both for our two institutions and the community at large who have benefited over the years from the outstanding clinicians borne out of this partnership.

*David Faktor*  
*St Vincent's Hospital, Public Relations*



Ms Anne Fallon  
Manager, Education Training &  
Development

# ST VINCENTS CLINIC & ST VINCENTS PRIVATE HOSPITAL



Ms Michelle Wilson  
SVC Executive Director

In 2013, 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 Sydney and St Vincent's Clinic include a strategy to increase clinical capacity. During the 2013 year, the Phase 3, medical student placements included Operating Suite, Day Surgery, the Patient Care Areas and a 2 day placement in the Pre Admission Center 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 two clinical placement days ( CPD ).

30 students were allocated to Pre Admission providing a total of 60 CPD. This is a significant increase from 2012 when the initiative commenced.

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 system.

In 2013 the case presentations were of a high standard and well attended. The presentations covered a full range of topics – plastic surgery, lower GI, upper GI, surgical oncology, urology, vascular surgery, orthopaedics, cardiothoracic ENT, hand and neurosurgery.

Interprofessional teaching and learning in 2013 was successful for the UNSW Medical students and their fellow medical and nursing student colleagues from Notre Dame University and other partner universities, participated in many shared teaching and learning activities on offer



in 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 Ben Wan. His study was on assessing the lung's capacity to adequately oxygenate with reversal of pulmonary blood flow, under the supervision of Dr Kumud Dhital.

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

We continue to explore strategies to increase teaching opportunities within St Vincent's Private Hospital Sydney and St Vincent's Clinic to complement student teaching and learning in public facilities.

St Vincent's Private Hospital Sydney and St Vincent's Clinic are proud to be actively involved with UNSW Faculty of Medicine and will continue to develop a leadership role in medical student teaching and learning in the private sector.



SVPH Pre-Admission Clinic

# EXAMINATIONS

In 2013 we ran nine days of examinations, assessing 249 students across the three Phases for Clinical, Oral and Portfolio examinations.

This immense effort could only have taken place with the generous assistance of the 193 patients and examiners that attended and the nursing and administrative staff who gave also up their time to assist.



Jeannette with Prof Allan Spigelman

## RETIRED: JEANETTE GULLINE

Has been employed as a nurse in the clinical school since 1983 to assist us with the undergraduate student exams.

Over the years, Jeanette not only has been a nurse and a friend, but also a patient and role player for us, filling in at last minute when the time called for it.

At the end of 2013, Jeanette retired to spend more time with her family and new grandchildren.

We wish Jeanette all the best for the future and thank her for all her years of service to the school.

# PHASE 1

## STUDENTS

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The Phase 1 program comprises integrated blocks based on clinical scenarios in each of the life cycle domains: Beginnings, Growth and Development; Health Maintenance; Ageing's and Endings and Society and Health.

From the first week in Medicine, clinical skills are developed through a program which alternates weekly between the on-campus clinical skills centre and hospital based bedside tutorials. The clinical skills sessions in Phase 1 focus on communication and history taking, as well as systems examinations of normal individuals.

At the Clinical School, we recruit Interns and JMO's to tutor the Phase 1 groups. One of our JMO tutors, Dr Avalon Mooney, has kindly added to our Phase 1 report:

Getting the chance to tutor Phase 1 UNSW medical students this year has been a rewarding experience for me.

Spending an hour or two a week teaching young doctors-to-be on the wards is a constant reminder of the lifelong commitment we make in choosing medicine as a career. It is a reminder of how long the journey is, how much we learn, how much we sacrifice, and how rewarding the experience is.

Just one year ago, many of these young medical trainees were in their final year of high school, striving towards a high mark in the HSC as the finale of years of study. And then one year later, they are once again at the very beginning of the road, looking ahead on a journey that dwarfs their prior efforts.

It is important to be aware of this when taking Phase 1 students for tutorials. This tutorial session could be the first time this student has ever laid hands on a very sick person. This could be the first time they have ever truly practised the art of listening to a patient's story. And this could be the first time they have ever seen what is described in textbooks in real-life.

Through my own medical training, I looked to my tutors - junior doctors and specialists alike - as role models. Observing them I learnt the importance of caring for and respecting your patients, the skill of listening to what is being said, and the intuition of hearing what is not.

The commitment to passing knowledge on to students is part of a long history of medical education that we all pledge to. I hope that I have contributed to this tradition, and inspired doctors-in-training to feel passionate for their chosen career in the same way I was inspired by my tutors.

*- Dr Avalon Moonen, Intern*

# PHASE 2 STUDENTS



We entered into Phase 2 excited, yet uncertain and admittedly fearful of what was to come. What was expected of us? Who will we be learning from? What will be the best way to gain knowledge? We had so many questions and so much apprehension. Thankfully, we were blessed with the guidance of our course tutors, bedside

tutors, clinical school staff and seniors who patiently helped and guided us through the year.

Our tutors were constantly imparting knowledge and clinical skills to us, and never failed to challenge us to think beyond. They patiently answered the questions we swarmed them with, and imprinted in us life skills that could not have been learnt from simply reading textbooks. Despite their busy schedules, they would arrange to have tutorials with us, and always tried to maximise the time we had. We have been truly blessed with first-rate tutors.

Despite the overwhelming content of Adult Health 2, Dr Russell Clark was able to break the content down for us systematically, making learning a lot more enjoyable for us. He was always very keen to impart to us and share his experiences, and drawing lessons from them really impacted our learning.

In our Aged Care and Rehabilitation term, A/Prof Nick Brennan's tutorials particularly impressed on us the ethical and legal issues surrounding geriatrics, and he taught us life lessons on what to do when faced with such issues. He

facilitated active discussions and constantly challenged us to think deeper into the different aspects of patient management.

Dr Mark Danta too, was a wonderful tutor to us during Adult Health 1. He taught us how to think critically, and always explained to us the basis of clinical medicine. Through that, we learnt not to take things at face value, but to think critically and to value a good foundational understanding.

In our Oncology and Palliative Care term, Dr. Anthony Chambers was always ready to impart his knowledge and patiently explain things to us, clearing any doubts that we had. His systematic teaching made it easier for us to grasp concepts, and to better remember points that had been discussed by putting them under headings. It also made the load of content less daunting for us.

Not forgetting our bedside tutors whom we also learnt a great deal from. We had a couple of bedside tutors who would come to the hospital just to conduct bedside tutorials for us despite being on break. Each bedside tutorial was enjoyable and we learnt so much from the different tutors from different specialties. We are really appreciative of the time and effort that they have invested in us.

We must also thank Naomi and Julee for ensuring that we received the best teaching and training, and for helping us solve problems that we encountered. Last but not least, our seniors too, were amazing. They volunteered out of their own time to conduct bedside tutorials for us, and we learnt so, so much from them. They shared with us their personal experiences as students and advised us from the perspective of someone who has been through what we are experiencing. This was invaluable.

In all, our experience in Phase 2 at St Vincent's has been impacting and fulfilling because of the people that we have encountered, the facilities here, and the wonderful teaching that has been offered.

*- Natalie Tang and Raina Loh, Phase 2 Medical Students*



Dr Brett Courtenay teaching students the placement of a plaster backslab with Phase 2 students.

# PHASE 3 (YEAR 5) STUDENTS

It has been a brilliant year for over 40 fifth year students who have spent time at St Vincent's Hospital in 2013, gaining clinical experience in disciplines including medicine, surgery, emergency/critical care and psychiatry.

For many, our first year of Phase 3 has been a highlight in our training, both for returning St Vincent students and new comers to the campus. Our one month rotations gave us the opportunity to meaningfully integrate into our allocated teams, who took us under their wings (not to mention

Dr Gett teaching Phase 3 students basic suturing



shouting our coffees- of notable mention here is orthopaedics)! We attended daily ward rounds, meetings, and were involved in the care of patients from admission to discharge. During surgery, we experienced some very early starts and some very short ward rounds, whilst during medicine we were grateful for the late starts, traded off against some very long ward rounds (still going strong at lunchtime).

Practical skills learned here included how to walk and write in patient files simultaneously to keep up on the ward round, sending specimens via the pneumatic tubes, and drafting discharge summaries. We also had plentiful opportunities to fine tune clinical skills such as ABGs and urinary catheterisation under the watchful eyes of our supervisors.

In addition to learning with our teams, we also enjoyed numerous organised learning activities. These included weekly



biomed tutes, diagnostics tutes in practical areas such as biochemical pathology, haematopathology and immunology (special thanks to Prof Jones, Dr Joseph and Prof Sewell!), skills sessions (suturing pork bellies) and weekly bedside tutes. Throughout the year we each presented several case studies in settings such as department meetings, giving us the chance to hone our presentation skills. We also had opportunities to spend time at St Vincent's Clinic, St Vincent's Private and the private theatres (with their better fitting scrubs!), and to be involved in the many research opportunities being offered. The spirit of peer teaching remained well and truly alive and we were fortunate to have viva tutes run by our ever thoughtful and generous 6th years, as well as having the chance to do some peer teaching for the Phase 1 and 2s.

The wonderful experience we had with the organisation of tutorials, assessments and extra curricular opportunities, not to mention pizza lunches, wouldn't have been possible without two of the lovely ladies in the Clinical School office, Naomi and Julee.

Whether it was sending us text message reminders ('You are already late for your tute. Please make your way there now!'), helping problem solve with any issues that arose, giving us access to the clinical school textbooks, rooms, technical support, and just being there for us, they were an active and integral part of our time here for which we are very grateful. We are looking forward to coming back in our final year!

*- Amy Lui, Phase 3 Medical Student*

# PHASE 3 (YEAR 6) STUDENTS

At the start of sixth year we stumbled back in to St Vincent's, returning from electives all over the globe with varied stories and experiences. As we quickly adjusted to being back in familiar surroundings we plunged into the final year of our medical degree with the looming prospect of final exams. The year as a whole was a strange balancing act between the mountain of hard work taking place in various study groups, while still trying to savour our last year as medical students.

We received amazing teaching and preparation for our final exams from consultants, registrars and recent UNSW graduates at St Vincent's Hospital. We owe so much to the teaching staff at the clinical school; to Naomi and Julee for their organisation; and a special thanks to Dr Nikki Bart for the hours she gave us. These people were incredibly generous with their time and knowledge, listening patiently to our answers to viva questions, watching us examine patients and reassuring us that it would all be alright!



While we tried to consolidate as much knowledge as possible we took on more responsibility, teaching students in Phases 1 and 2. For us this has been incredible and created a culture, which we feel sets St Vincent's apart. Throughout the year we have taken Phase 1 students on bedside tutorials.





For some of these students it was their first time in a hospital in a clinical situation. It has been a privilege to teach these younger students and realise that we have so much to offer them. Now that our final exams are over we have also taken on teaching Phase 2 students undertaking the Clinical Transition Course. These third and fourth year students are receiving a four-week refresher on clinical skills following their research year. From my experience at least, it has been a valuable experience, I've been impressed by my students' abilities and their enthusiasm. And finally there are the fifth year students who are approaching their end of year exams. We have been holding practice exam sessions with them and know that they will be fantastic.



The opportunity to teach and learn at St Vincent's has been so valuable. It has a unique culture and we are all so grateful to have been taught here. We hope that future years will continue to teach those behind them and make the most of this place and what those here have to offer.

- Alex Hawkes, Phase 3 Medical Student

# ELECTIVE STUDENTS

2013 saw 45 International and National students come to St Vincent's for an elective/clerkship attachment in the discipline of their choice. Departments that were popular included Cardiothoracic Surgery, Orthopaedic Surgery, Endocrinology, Colorectal Surgery, Gastroenterology and HIV Medicine.

Students were able to gain valuable medical knowledge and experience within our hospital culture. They are offered all the same teaching as our UNSW students and are encouraged to attend any clinical based skills sessions and other activities. It is such a pleasure to accommodate the elective students; they bring an exciting dynamic to the School and we welcome their feedback regarding our teaching programs.

We ask our students to fill out a feedback form at the end of their term; here are some responses to different questions:

**Rainer Beate Christina, University of Graz, Switzerland**

Supervisor: Dr Mark Danta – Gastroenterology

Q. What aspects of the clerkship did you enjoy most?

*"The nice and friendly team and a smaller hospital meant more time for students "*

**Robert Shing Kit Chan, The University of Hong Kong, Hong Kong**

Supervisor: Dr Rohan Gett – Colorectal Surgery

Q. How does St Vincents clinical teaching and facilities compare with those of your home hospital and Clinical School?

*"All teachers are very willing to teach and give their students hands-on experience in clinical procedures. The facilities here are more advanced than those in public hospitals in Hong Kong. "*

**Drew Saylor, University of Virginia, USA**

Supervisor: A/Prof Jane McCrohon – Cardiology

Q. What aspects of the clerkship did you enjoy most?

*"The teaching was excellent. I loved the team and the variety of patients. There are some differences in practice between here and the states but teaching and facilities were equal."*

**Mays Al Atiyat, Jordan University of Science and Technology, Jordan**

Supervisor: Dr Jerry Greenfield – Endocrinology

Q. Any other feedback/suggestions/compliments?

*"I would like to thank all the doctors and registrars in the Endocrinology Department for giving me the chance to help them in clinics (taking patient history and examination) and treating me as a part of their team."*

# INDEPENDENT LEARNING PROJECTS

## JACQUELINE LAI

**Project:** Evaluation of continuous-flow left ventricular assist device function with exercise in patients with advanced heart failure

**Supervisor:** Prof Christopher Hayward

Left ventricular assist devices (LVADs) are mechanical pumps which are inserted into the left ventricle to support cardiac output and have become increasingly common in the management of advanced heart failure. As these devices becoming more reliable, emphasis in management has shifted toward enhancing activities of daily living, rather than just survival. However, LVAD patients continue to be limited by exertional fatigue despite chronic mechanical circulatory support. This study sought to investigate whether there is merit in increasing pump speed with exercise to increase pump flow and improve invasively measured central haemodynamics. LVAD patients undergoing routine right heart catheterisation were studied while performing graded exercise at baseline pump speed and an increased pump speed.

This study found that increased pump speed resulted in significantly higher pump flows (6.9 L/min vs. 7.7 L/min,  $p < 0.01$ ) and reduced

pulmonary capillary wedge pressure (28mmHg vs. 31mmHg,  $p < 0.01$ ). Right-sided pressures and mixed venous oxygen saturation were unaffected by pump speed changes. No episodes of ventricular suck-down were encountered and left ventricular



dimensions were not significantly reduced by increased pump speed. From analysis of pump flow waveforms, we were able to derive a new parameters for the assessment of cardiac function - the gradient of pump flow during diastole, or diastolic  $dQ/dt$ , which was found to be a strong predictor of pulmonary capillary wedge pressure. The ability to non-invasively assess loading conditions has implications for future designs of automatic, preload-sensitive pump speed controllers. In summary, this study supports increasing pump speed with exercise in patients implanted with cLVADs.

## RACHEL HMAR

**Project:** Understanding and improving the use of allopurinol in a tertiary hospital setting

**Supervisors:** Prof Ric Day, Prof Kenneth Williams, Prof Garry Graham

Allopurinol inhibits uric acid synthesis and is widely used as the first-line agent for gout prophylaxis. A rare but severe adverse effect of allopurinol is allopurinol hypersensitivity (AH) that includes a spectrum of cutaneous reactions and systemic manifestations. AH is thought to be dose-dependent and associated with poorer renal function hence conventional teaching has emphasized the need for maintenance doses of allopurinol to be titrated against creatinine clearances. However studies have shown that such doses do not necessarily guarantee AH nor provide adequate management of gout as doses may be too low. Newer guidelines on the use of allopurinol for gout have shifted the focus back on titrating maintenance doses against serum uric acid (SUA) concentrations to reach a target of  $<0.36$  mmol/L while dose adjusting for renal function when deciding on the initial dose.

**Aims & Methods:** The aim of this study was to capture trends in the usage of allopurinol in a tertiary hospital and to explore options for improving therapy. This was done through database analyses of allopurinol usage data and patient biochemistry results, i.e., SUA concentrations, estimated glomerular filtration rate, from January 2008 to January 2013. Departments utilizing the most allopurinol were identified and doctors within those specialities were invited for an interview to assess their knowledge of allopurinol use and understanding their prescribing practices.

**Conclusion:** Allopurinol was mostly prescribed to patients who were admitted on it and in the same doses. Dose review was not carried out often as the patient's presenting problem was of higher priority in an acute care setting. Dose trends showed adjustment for renal function but did not appear to bring SUA concentrations down to target levels in some patients, especially those with severe to end stage renal disease. This study recommends that gout patients on allopurinol should have at least one SUA measurement during hospital admission as this allows for any follow-up with a community general practitioner if necessary.

## JI WOONG MOON

**Project Name:** Understanding and improving the use of metformin

**Supervisors:** Prof Ric Day and Prof Kenneth Williams

Metformin is the first-line treatment for T2DM and it is considered an effective and safe drug. However, there are obstacles in optimal use of the drug. Since metformin is eliminated very largely by renal excretion, renal function is an important consideration in use of the drug. Impaired kidney function is prevalent in people with T2DM but the current guidelines provide inconsistent renal function thresholds for discontinuing metformin. Nevertheless, there is considerable discussion about the recommendations and recent work suggests it may be safe to use metformin at creatinine clearances down to 20 mL/min. Limited information on metformin use in hospitals is available. Therefore, this report attempts to understand metformin use in Australia and at St Vincent's Hospital (SVH) and discuss ways to improve its use. Data on metformin use were collected via various resources; Australian Bureau of Statistics, Drug Utilisation Sub-Committee of the Department of Health and Ageing, Medicare and MedChart (electronic medication management program used at SVH). Prescribers at SVH were interviewed for opinions on metformin use. The results illustrate rapidly increasing use of metformin in Australia and analysis of the use of the drug at SVH provided a snapshot of the community use of the drug. The results suggest that metformin dosage is sub-optimal. Optimising dosage with metformin may be achieved through improvement in the guidelines, monitoring of metformin plasma concentrations as well as detailed measurement of glucose control.

## XIAOTONG TAN

**Project:** The In Vitro Effects of Detergent Sclerosants on Fibroblasts

**Supervisor:** A/Prof Kurosh Parsi

Fibroblasts make up the predominant long-lived stromal cell type with the main feature of producing the ECM component. However, the effects of these sclerosant agents on fibroblasts have yet to be studied. Thus, the aim of this study is to investigate the effects of these agents on fibroblasts at different concentrations, determining if it results in cell activation or cell death, and if so, if cell death occurrence is via apoptosis or oncosis.

## KELVIN CHEUNG

**Project:** In vitro effects of detergent sclerosants on endothelial cells

**Supervisors:** A/Prof Kurosh Parsi and Dr David Connor

Summary: The aim of the project was to determine the mechanism of cell death in human umbilical vein endothelial cells (HUVECs) following incubation with low concentrations of the sclerosants sodium tetradecyl sulfate (STS) and polidocanol (POL). Flow cytometry and immunofluorescence microscopy were used to assess endothelial cell apoptosis. Live cell imaging was carried out to determine any morphological changes in HUVECs following STS and POL incubation over a 3hr time period. Results showed no evidence of BAX and caspase 8 upregulation but evidence of increased PS exposure (POL 0.15%) following STS and POL incubation. Live cell imaging revealed POL caused HUVEC death at a faster rate than STS. The study concluded that HUVECs show no current evidence of apoptotic changes following low concentration STS and POL incubation in vitro and further investigation is required to elucidate the precise cell death mechanism.

## MAWSON WANG

**Project:** Iron Chelation Induces ‘Browning’ of White Adipose Tissue in C57BL/6 Mice Studied In-vivo and In-vitro

**Supervisors:** A/Prof Jenny Gunton

The obesity epidemic is a significant global health crisis, with recent research focusing on methods of inducing weight loss through targeting the adipose organ. Hypoxia-inducible factors (HIFs) are transcription factors involved in regulating numerous cellular processes, including lipid and glucose metabolism. Iron regulates HIFs, and iron chelation increases HIF levels. This study examined the effects of iron chelation on C57BL/6 mice fed a high-fat diet, and on pre-adipocytes isolated from wild type mice and differentiated in tissue culture. Results showed a ‘browning’ phenomenon associated with iron chelation, as it resulted in reduced weight gain, improved glucose tolerance, and higher oxygen consumption rate. There was also increased expression of genes specific for brown fat. Thus, iron chelation may be beneficial for treatment of diet-induced obesity and diabetes.

## HONGHUA ZHANG

**Project:** A study looking at the effect of drinking alcohol and psychological stress (Induced through a stroop test) on blood flow, skin temperature and sweating in people with and without rosacea: A pilot study

**Supervisor:** Dr Margot Whitfeld

**Aims:** To investigate the effect of induced flushing through alcohol or psychological stress on blood flow, skin temperature and sweating in people with rosacea and to compare them to people without rosacea. To determine the difference between how people with rosacea flush compared to people without rosacea

**Design:** Pilot study using case control methodology

**Procedure:** Induce flushing in people with and without rosacea using the stroop test or alcohol and measure their heart rate, blood pressure, skin temperature, blood flow to the skin and the Galvanic skin response (sweating of the skin)

## KYANG LEE SHYANG

**Project:** Investigation of beige adipocytes in human visceral, gastro-oesophageal and abdominal subcutaneous fat

**Supervisor:** A/Prof Reginald Lord

**Summary:** We aim to identify thermogenic beige adipocytes in human omental, gastro-oesophageal and abdominal subcutaneous adipose tissue through immunohistochemistry, immunoblotting and quantitative RT-PCR. In summary, UCP1-positive multilocular adipocytes are present in visceral and gastro-oesophageal fat. Gastro-oesophageal fat, in particular, possesses molecular signatures characteristic of the beige adipocytes markers found in vitro.

## ALESSANDRA SAVITRI SURJAUDAJA

**Project:** The in vitro effects of detergent sclerosants on platelet apoptosis

**Supervisor:** A/Prof Kurosh Parsi

**Summary:** Objectives: To determine whether low concentrations of detergent sclerosants induce platelet apoptosis subsequent or concurrent to platelet activation; and whether high concentrations induce events of apoptosis other than platelet lysis.

**Methods:** Whole blood samples in citrate tubes were processed into platelet rich plasma (PRP) or washed platelets. Platelets were incubated with STS or POL of different concentrations for 15 minutes and marked with antibodies for analysis. The exposure of phosphatidylserine (PS), the expression of mitochondrial protein Bax and cytosolic protein caspase 8 were measured and analysed by flow cytometry, while morphological features were analysed by fluorescence microscopy.

**Results:** PS exposure was induced at all concentrations of sclerosants, with the highest levels detected at concentrations of 0.6% and 0.3% for STS and POL respectively. The expression of Bax was low for all concentrations of POL while STS induced apoptosis at 0.3% and 0.6% concentration where the expression of Bax reached a similar or higher level to ABT-737 – an apoptotic agent used as the positive control. Caspase 8 expression was negative for all concentrations of STS and POL. Morphological analysis demonstrates the presence of PS exposure and shape alteration at 0.15% STS and POL.

**Conclusion:** Our findings suggest that STS and POL stimulation induce no apoptotic processes concurrent to or following activation at low concentrations (<0.1%); and no apoptotic processes contributing to platelet lysis at high concentrations of POL (>0.1%), while weak evidence of intrinsic pathway of apoptosis is shown at higher concentrations of STS. The presence of PS exposure at low concentrations is therefore not attributed to apoptosis.

## IAN TENG

**Project:** Attitudes and Knowledge of Medical Practitioners to Hereditary Cancer Clinics and Cancer Genetic Testing

**Supervisor:** Prof Allan Spigelman

**Summary:** Genetic testing for susceptibility for common cancers is widely available. Thus, doctors have a role in identifying and referring patients who would benefit from a consultation with a specialist in genetics. This study aims to assess doctors' referral rates, knowledge and attitudes towards cancer genetic testing, broken down by specialty (gastrointestinal, breast/ovarian, other specialties and GPs). A 4-page questionnaire was mailed out to the GPs of all patients seen in 2012 in the Hereditary Cancer Clinic (HCC) of St. Vincent's Hospital Sydney (n=128) and all the specialists in St. Vincent's Hospital Sydney that might refer to the HCC (n=33). 50 questionnaires were returned (31%). From the responses, we found that most doctors have referred a patient for cancer genetic testing (90%). The average proportion of patients referred was 1 in 68.5 patients with breast/ovarian specialists referring the most, followed by gastrointestinal specialists and GPs. There was suboptimal knowledge of cancer genetic testing amongst doctors. Breast/ovarian specialists were most knowledgeable, followed by gastrointestinal specialists, other specialists and GPs. There were

indications of inappropriate referral amongst doctors. Most (77.6%) doctors were willing to receive further information on cancer genetics. Nearly all (94%) doctors believe that it is their duty to inform an individual at high risk for hereditary cancer that cancer genetic counselling and testing is available. Overall, we found that the majority of doctors have positive attitudes towards cancer genetic testing. Defective knowledge scores, however, indicate that doctors need further training or tools to enable them to refer patients appropriately for cancer genetic testing.

## KAYE YEUNG

**Project:** Osteitis in chronic rhinosinusitis subtypes

**Supervisor:** A/Prof Richard Harvey

Summary: steitis (neo-osteogenesis) is a thickening of bony walls in paranasal sinuses that occur frequently in recalcitrant chronic rhinosinusitis (CRS), where patients often respond poorly to treatment and disease recurrence is high. Whilst the pathophysiologic mechanisms are yet to be clearly defined, bone has been speculated to be a nidus of inflammation that contributes to ongoing disease. A 3-mm cut off point to denote pathological bony thickening on computed tomography (CT) scans has been utilized in past studies, where greater severity of osteitis has been associated with higher disease severity, presence of polyps, higher tissue eosinophil levels, and past endoscopic sinus surgery. This study seeks to firstly devise a grading scale for bony thickening based on cut-off points derived from data collection from a non-CRS group of control patients. It then aims to build on existing knowledge with the characterization and comparison of osteitis across CRS subtypes, including CRS with or without polyps, eosinophilic CRS and allergic fungal sinusitis. Secondary objectives are to correlate findings of osteitis with disease severity Lund-Mackay scores, quality of life scores, and histopathological variables.

## JOHN COLGAN

**Project:** Outcomes of Minimally Invasive Dorsal Lumbar Interbody Fusion - An Initial Experience

**Supervisor:** Dr Richard Parkinson

Clinical outcomes will be determined via a number of parameters. A retrospective chart review will be performed to determine clinical outcome, procedural complications, postoperative analgesia regiment, operating time and estimated operative blood loss (EBL). This data will be used to assess feasibility and advantages through its comparison with pre-existing data regarding the open surgery. In term of complications, we will specifically focus on neurological complications as a low neurological complication rate is crucial to the surgery's feasibility and safety. These will be measured as a percentage of the total patient database.

The Short Form Health Survey (SF-8) will be used to determine both physical and mental function and quality of life. Pre-operative and post-operative SF-8's will be compared to define any improvements or changes in physical and mental health which coincided with the surgery. Patients were asked to complete the preoperative survey at their initial clinical appointment whilst the postoperative surveys will be administered via telephone. Postoperative Oswestery Disability Index Questionnaire's (ODI), also administered via telephone, will also be used to determine functional disability specific to spinal disorders. These parameters will also be key measurements of the surgery's feasibility.

## WAN XIAN GOH

**Project:** The effects of detergent sclerosants on human leukocytes

**Supervisor:** A/Prof Kurosh Parsi

We investigated the effects of detergent sclerosants Sodium Tetradecyl Sulphate (STS) and Polidocanol (POL) on cytokine release, cellular activation and the mechanism of cell death of human leukocytes. In conclusion, there is no significant VEGF release post-sclerotherapy in-vivo. For the in-vitro studies, STS causes activation of both granulocytes and monocytes, while POL only causes significant activation of granulocytes. Furthermore, mid-range concentration of STS induces apoptosis through the extrinsic and intrinsic pathways, whereas low concentration of POL is linked to only apoptosis through the intrinsic pathway. High concentrations of sclerosants also induce total cell lysis.



## JOSHUA TING

**Project:** A Retrospective Study of Posaconazole Use in St Vincent's Hospital, Sydney

**Supervisors:** Prof Richard Day and Prof Kenneth Williams

Posaconazole is a broad spectrum, triazole antifungal used in the treatment and prophylaxis of invasive fungal infections (IFIs). While the drug has good efficacy against multiple fungal species, it is currently only available as a weakly soluble oral suspension. Absorption of the drug is erratic and affected by multiple factors, including dosing regimen, co-administration of nutritional supplements and concomitant medications. This study aims to optimise posaconazole use by retrospectively observing the current dosing practices in St Vincent's Hospital (SVH) and determining the opinions of prescribers to therapeutic drug monitoring. It will also explore the effects of clinical interventions on posaconazole concentration to determine their usefulness in a real-life setting.

## RYAN LUI

**Project:** Prognostic Indicators of Renal Function in Patients Undergoing VAD Implantation

**Supervisor:** Dr Kumud Dhital

Ventricular Assist Devices (VAD) are increasingly implanted in advanced heart failure patients over the past 30 years, reducing heart failure related morbidity, improving quality of life and prolonging survival. In this setting, VADs have been used as bridge to transplantation (BTT), destination therapy (DT) and cardiac recovery. Increased uptake of this technology reflects a shortage of suitable donor hearts at a time when an increased amount of patients enter chronic heart failure as medical treatment continues to improve survival. A cohort of patients requiring VAD as destination therapy through ineligibility for conventional orthotopic heart transplantation further adds to the demand.

Although renal function improves in most patients following VAD implantation, a significant number deteriorate, with some requiring permanent renal replacement therapy. Acute renal dysfunction (ARD) post VAD implantation is also associated with high morbidity and mortality. The reported incidence of acute renal dysfunction post- VAD implantation has been highly variable, with rates between 16 to 45%. and specific determinants for renal improvement post LVAD implantation have not been explored in major multicenter LVAD trials. The current study therefore aims to identify demographical, pre-, peri-, and post-operative variables which predispose to poor renal outcomes following VAD implantation. This is a retrospective analysis of the cohort of VAD patients who underwent implantation of continuous flow VentrAssist and HeartWare devices at St. Vincent's Hospital Sydney.

## TAEHO JEONG

**Project:** Assessment of the role of autonomic nervous system in androgenetic alopecia: A pilot study

**Supervisor:** Dr Margot Whitfeld

**Primary objective:** To investigate the effect of stimulated sympathetic response through hot water on skin temperature, sweating rate, heart rate and blood pressure in people with androgenetic alopecia

**Secondary objective:** To investigate the mechanism of autonomic nervous system in androgenetic alopecia

**Hypothesis:** People with androgenetic alopecia will show responses after administration of the trigger as measured by blood flow, skin temperature and galvanic response of scalp.

**Research design:** This study design is intended to be a pilot study to assess feasibility and to inform future research. This is a multi-centred, prospective single cohort study trial.

**Study procedure:** Stimulate sympathetic response in people with androgenetic alopecia using hot water as the trigger and measure their heart rate, blood pressure, skin temperature, blood flow to the skin and the Galvanic skin response (sweating of the skin). These will be measured using PowerLab 8/35 unit, which involves placing a number of discs on the skin to measure the parameters above which are connected via wires to the PowerLab 8/35 apparatus.



## XIANG YIH LAY

**Project:** Surgical Mitral Valve Repair- Review of Outcomes over 5 Years

**Supervisors:** Dr Emily Granger

This study will review all the outcomes (survival, complications, cardiac function) of all patients who underwent Mitral Valve Repair surgery between 2007 and 2012.

The results will identify which groups are more predisposed to complications and poorer survival so that other options can be considered for those groups in future management.

## JIA LI LEE

**Project:** Flow Cytometry in T-cells: TCR VBeta Repertoire Analysis and Potential Markers Including Programmed Death 1 (PD-1)

**Supervisors:** A/Prof William Sewell and A/Prof David Brown

This project is on the use of flow cytometry in haematological malignancies, and has three parts, namely evaluation of the TCR VBeta repertoire analysis, a prospective study of novel markers in T-cell neoplasms, and a prospective study of PD-1 in tissues. The first component involved performing a retrospective survey of samples tested for TCR VBeta expression by flow cytometry in SydPath (St. Vincent's Pathology) from 2008 to the present. Of the 17 cases with a confirmed T-cell neoplasm, flow cytometry used Vbeta to detect a monoclonal population in 16 cases. However, there were 68 monoclonal samples that were not followed up with a diagnosis of a T-cell neoplasm. Therefore the clinical significance of such frequently occurring monoclonal populations is unknown.

The utility of several markers not previously tested in the St. Vincent's Pathology flow cytometry laboratory was evaluated. These included CD26, CD27, CD28, CD45RA, CD45RO, CD94 and CD279 (PD-1). However, evaluation of these antibodies was limited by the low number (n=3) of confirmed T-cell neoplasm cases seen during the study period. In these three cases, which were all CD8+, CD94, a marker intended to detect T-cell large granular lymphocytes, appears to be as or more sensitive than current markers.

Antibodies to PD-1 have recently been shown to be beneficial in certain cases of non-haematological malignancies, but there are limited studies on PD-1 expression in haematological malignancies. Tissue samples received at the laboratory were therefore evaluated for PD-1 expression on T-cells. The bone marrow aspirate samples had significantly lower PD-1 expression on T-cells compared with samples from other tissues. Future investigations of PD-1 and PD-L1 in haematological malignancies may contribute to our understanding of the distribution of PD-1 and thus the design of T cell based immunotherapies.

## PHILLIPA LENNOX

**Project:** Introduction of a wellbeing pack for relatives, staff and patients in the ICU

**Supervisor:** Prof Kay Wilhelm and Dr Priya Nair

**Introduction:** There are a number of factors that impact negatively on a patient's adjustment during their stay in ICU. These include emotional dysregulation, poor sleep quality, presence of delirium and distress and uncertainty in the patient's relatives. Sleep was identified as one of the major areas that cause concern to the patient's relatives and poor sleep quality increases the risk of delirium in the patient. It is important that the patient is as calm as possible and the patient's relatives play an important part in providing support for the patient in the ICU. It is therefore important to provide them with information and roles to ensure their own wellbeing, which should subsequently improve patient wellbeing.

**Method:** A wellbeing pack was developed, containing items from the literature reviewed. It was distributed to relatives in the ICU and subsequently qualitative feedback about the ICU experience and the usefulness of the wellbeing pack was collected.

**Results:** 12 relative were approached, of whom 6 took part in this study.

**Discussion:** The delirium/sleep information sheet was highly regarded by both relatives and staff and was effective as an information medium. The patient information sheet improved the relationship between the staff and patient and warned staff about previous experiences that may be relived during this time. The hand massage techniques and the wellbeing cards gave the relative a functional role in the patients care and was found useful by some. The eyeshades and earplugs provided to approved patients helped improve their sleep by reducing environmental light and noise. Patients in their own room due to isolation reasons did not have the same difficulties with sleep as others highlighting the impact of the ICU environment on sleep.

**Limitations:** Size of the study was small but provide some useful preliminary data which is likely to be reflected in a larger sample. Monitoring of sleep of patients was inconsistent. In future studies a more effective method of recording sleep would be required with cooperation from all the staff in the ICU.

**Conclusion:** The packs proved very helpful as a source of information for the relative and enabled them to contribute to the patient's care. This study is different to previous studies due to the holistic approach it took concerning patient care.

## JIAN HUA AARON TAN

**Project:** Gene expression analysis of Trisomy 21 haematopoietic lineage and leukemic cells

**Supervisor:** Prof David Ma and Dr To Ha Loi

Children with Down Syndrome (DS) have an increased risk of developing acute leukaemia, theorised to occur in a three step process beginning with Trisomy 21 (Tri21), progressing to a Transient Myeloproliferative Disorder (TMD), and culminating in Acute Megakaryoblastic Leukaemia (AMKL). This study aims to determine if key genetic elements on chromosome 21 including ERG, ETS2, and microRNA (miR)-99a and 155, which can directly impact haematopoiesis and regulate downstream genes and pathways (TAL1 and mTOR pathway) to drive abnormal haematopoiesis, are overexpressed in Tri21 cells versus control. Non-Tri21 genes known to be involved in megakaryopoiesis may also be associated with the pathogenesis of DS-AMKL.

Embryoid bodies derived from bona-fide iPSC lines were cultured in defined haematopoietic differentiation medium to produce CD34+ haematopoietic stem cells (HSCs). Assessment of functional haematopoiesis by colony forming assays demonstrated that HSCs derived from Tri21-iPSCs had greater clonogenic potential and generated more CFU-E, BFU-E and CFU-GEMM colonies compared to control cells. Real-time RT-PCR of these pre-leukaemic (Tri21) haematopoietic colonies detected  $\geq 1.4$  fold increase in relative expression of Tri21 elements ERG and ETS2 compared to their Normal Karyotype (NK) counterparts. This was also observed in a DS-AMKL cell line (CMY) when compared to NK megakaryoblastic cell lines such as MEG-01. Our cell line model of DS-AMKL has also shown a change in other haematopoiesis regulatory gene and miR expressions which are known to be involved in megakaryopoiesis in DS-AMKL compared to non-trisomic megakaryoblasts. To sum up, we have identified specific genes associated with the aberrant trisomy-21 haematopoiesis and megakaryoblastic leukaemia. The role of these genes in the pathogenesis of this trisomy 21 condition warrants further investigation.

## BRYAN TRAN

**Project:** The combined approach to carotid disease and cardiac surgery: a prospective investigation

**Supervisor:** Dr Tony Grabs

Overall, 2% of patients undergoing a cardiac surgical procedure will suffer a stroke. Patients with carotid artery stenosis (CAS) have an observably higher rate of perioperative and postoperative neurological complications. The protocol at St Vincent's Hospital is to perform a carotid endarterectomy to reduce neurological outcomes for patients receiving cardiac surgery if the stenosis is greater than 80% and the patient is asymptomatic or the stenosis is greater than 60% and the patient is symptomatic. The chosen method for this is to perform both operations in the same surgical sitting (the 'combined operation'). The most recent Cochrane review (2009) on the use of a carotid endarterectomy for carotid stenosis in patients selected for coronary artery bypass graft surgery did not find any eligible randomised trials (Mortaz Hejri, Mostafazadeh Davani and Sahraian, 2009).

The objective of this prospective cohort study is to analyse the safety and efficacy of the combined procedure by performing pre and postoperative MRI and clinical assessments on patients receiving a combined operation. The planned sample size is 10-20 patients. This year, one patient was recruited in the project. Both the research protocol and the procedure for this patient were successful.

## KARTHIK VENKATESH

**Project:** Point of care coagulation monitoring in adult patients receiving Extracorporeal Membrane Oxygenation (ECMO)

**Supervisor:** Dr Priya Nair

Extracorporeal membrane oxygenation (ECMO) is being increasingly applied in adult intensive care units to manage refractory cardiac and respiratory failure. Perturbations in haemostatic function occur frequently during ECMO, leading to bleeding and thrombotic events in up to 60% of patients. The causes of these alterations are multifactorial, and may not be easily identified through standard laboratory testing. Point of care testing (POCT) using thromboelastometry (TEM) and multiple electrode platelet aggregometry (MEA) may enable a more comprehensive analysis of coagulation and therefore improve ECMO management. POCT has been prospectively validated to manage coagulation in patients receiving cardiopulmonary bypass, but has not been formally assessed in ECMO.

The aims of this study were to characterise the coagulation profile during ECMO using POCT and assess the utility of POCT in this population. 10 adult patients were enrolled, they all received standard care, and POCT was performed for observational purposes. The cardinal finding of this study was a significant reduction in qualitative platelet function (50-70% of measurements), as identified by POCT, but not by standard laboratory testing. On days where patients bled and required administration of coagulation support products, there was a substantial reduction in von Willebrand Factor induced aggregation, as shown by MEA. Additionally, on occasions where diffuse bleeding occurred, use of a POCT algorithm may have enabled earlier identification of the coagulation defect and targeted therapies to correct the disorder. In conclusion, platelet dysfunction is evidently very common during ECMO, and the inclusion of POCT into ECMO care may enable earlier identification of this disorder. The comprehensive coagulation analysis offered by POCT may improve anticoagulation and the administration of blood products in patients receiving ECMO.

# HONOURS PROJECTS

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## HANNAH KEMPTON

**Project:** Duration of Hypothermia, Rewarming Rate and Temperature, Influence Surgical Outcomes for On-Pump Coronary Artery Bypass Grafting

**Supervisor:** Dr Kumud Dhital

**Summary:** Cardiopulmonary bypass (CPB) is standard practice during coronary artery bypass graft (CABG) surgery. Temperature during CPB has an established influence on surgical outcomes. The purpose of this study was to examine the relationship between the minimum hypothermic temperature, duration of hypothermia, rewarming rate, and maximum rewarming temperature and the resulting surgical outcomes.

To achieve this, we analysed 2259 patients who underwent isolated on-pump CABG between June 2000 and May 2013. Outcome variables measured by this study included mortality, myocardial infarction, stroke, infection, prolonged ventilation, renal failure, return to theatre, delivery of blood products, 24-hour blood loss and post-operative length of stay.

The results of the analyses revealed some important associations between our current practices of rewarming rate, rewarming temperature, duration of hypothermia and adverse surgical outcomes.

## JACQUELINE HO

**Project:** Nuocyte flow cytometry in chronic rhinosinusitis

**Supervisor:** A/Prof Richard Harvey

**Summary:** Chronic rhinosinusitis (CRS) is a heterogeneous disease defined by inflammation of the paranasal sinuses, however its pathogenesis remains unknown. Recently discovered cells known as nuocytes or type 2 innate lymphoid cells have been implicated in the activation and mediation of TH2 inflammation, especially in diseases such as CRS and asthma. There have been very few human studies

into nuocytes and the study aims to identify nuocytes in sinus mucosa from patients with CRS using flow cytometry. These nuocytes represent an exciting new area in immunology and rhinology and may lead to an increased understanding of TH2 diseases.

## MARTIN HARB

**Project:** Natural history of heart failure requiring ventricular assist device therapy.

**Supervisor:** Dr Kumud Dhital and Prof Christopher Hayward

**Summary:** While the gold standard treatment for Stage D Heart Failure is heart transplantation, the limited number of donor hearts has meant that many patients must receive alternate therapy in the form of a mechanical Left Ventricular Assist Device (LVAD). This study aims to determine the appropriate timing of this LVAD therapy at St Vincent's Hospital, Darlinghurst. Retrospective data from 92 consecutive VentrAssist and Heartware LVAD recipients from October 2004 to September 2012 was collected. Additionally, 13 pre-operative risk-models were initially selected from the literature as being predictive for heart failure-related death or necessity for VAD therapy. However in this retrospective analysis, the available data could only support 4 of these models for further analysis. These include 3 models used to predict mortality in heart failure patients; the Acute Decompensated Heart Failure National Registry (ADHERE) model (n=89); the Lietz-Miller score (n=70), and the Felker et. al. score (n=87), as well as the score described by Matthews (n=87) to predict the need for right ventricular (RV) support following LVAD implantation.

The mean age of patients was  $49.47 \pm 15.61$ , 78.3% were male, and 33.7% had an ischaemic etiology. 90.2% of patients received LVAD as a bridge to heart transplantation and 28.3% required RV support in the form of Extracorporeal Membrane Oxygenation (ECMO) at either the time of LVAD implantation or post-operatively. 48 patients (53.3%) had been admitted previously, while the remainder were either transferred emergently from another hospital, or received an LVAD on their first admission. As of September 2013, 59.0% of eligible patients were bridged to transplantation, 28.9% have died while waiting, and 12.1% are still on the transplant waiting list. Applying the risk-models, 77.5% of patients had a predicted risk of in-hospital mortality  $\geq 12.42\%$  according to the ADHERE model. The mean Lietz-Miller score was  $11.98 \pm 5.52$  indicating a 38% (medium) risk of 1-year mortality. The mean Felker score was  $209.43 \pm 39.30$  indicating a 20.0% risk of in-hospital mortality. The Matthews score predicted that 31.0% of patients might require RV support with an odds ratio  $\geq 2.8$  for RV failure, compared to the 28.3% that received it.

Of the previously admitted patients, 8 had data available to calculate both the ADHERE and Matthews scores at both a time period 0 to 3 months before, and 3 to 6 months before LVAD implantation. We found no significant difference in between those scores and the score at the time of VAD implantation, however the Matthews score showed that patients were progressively getting worse with time, suggesting that it may be useful to implant heart failure patients with VAD's at an earlier time point compared to what we do at present.

## RAMESH DE SILVA

**Project:** Early and Midterm Outcomes in the Management of Stanford Type A Aortic Dissection: A single centre experience

**Supervisor:** Dr Emily Granger

**Summary:** Stanford Type A Aortic Dissection is the most common reported emergency of the aorta and shows a rising incidence in our community. The surgical management of this condition can be complex depending on the extent of the dissection and associated co-morbidities. Despite much improvements in diagnosis, surgical techniques, cerebral protection and post-operative care, long term outcomes remain suboptimal in the literature. Australian data on the management of this devastating condition is minimal. Our project therefore aimed to review the outcomes of Type A Aortic Dissection at St. Vincent's Hospital from 1995 – 2013 and define pre/intra/post-operative variables that may predict short and long term mortality.

Our centre reports excellent in-hospital mortality rates for surgical managed Type A Aortic Dissection at 13.3% compared to international reports at 10-25%. As expected, those patients treated medically experienced

significantly greater risk of mortality with 60% in-hospital death. Amongst patients treated surgically, 41% experienced some form of neurologic dysfunction and 20% suffered from a post-operative infection. Multivariate regression analysis revealed, Age >70, low post-operative ejection fraction and pre-operative radiologic evidence of false luminal extension into arch vessels as significant predictors of in-hospital mortality. Survival analysis suggests that 80 % of patients are likely to be alive at 2 years and 70% alive at 4 years. 29% of patients, mostly from regional/rural areas were lost to follow up. In conclusion, management of Type A Aortic Dissection at St. Vincent's Hospital compares well with international centres. Tailored management strategies may be developed to address high risk identified above to improve immediate outcomes. A structured surveillance program may be useful to ensure necessary to achieve complete monitoring of patients post-discharge to identify those at high risk of dissection related complications.

## TOM PALESY

**Project:** The diagnosis and management of external nasal valve dysfunction.

**Supervisors:** A/Prof Richard Harvey and Dr George Marcells

**Summary:** External nasal valve dysfunction (EVD) is one of the most common causes of nasal obstruction. Previous lack of knowledge of the importance of the external nasal valve in nasal patency has resulted in continuing emergence of EVD in recent literature. Although the aetiology, signs and symptoms of EVD are understood, the most effective way of diagnosing and managing cases has not yet been convincingly described or validated. A primary concern is the lack of objective measurements used in EVD research, in particular as part of outcome assessments following surgical management. There are tests available, but they have not been adequately presented and introduced alongside popular patient-reported outcome measures. There is also potential use for these objective tests in the diagnosis of EVD, where currently there is reliance on clinician experience and observation alone. Future research in these areas would allow a greater objective understanding of one of the most common causes of nasal obstruction, and may possibly improve the future efficacy of EVD diagnosis and management.

This study will focus on the objective measurements of peak nasal inspiratory flow, rhinomanometry and acoustic rhinometry. It is hoped that these tests may complement the patient-reported measures that are much more commonly used today. Overall, the study will make a comment about the viability of incorporating objective measurements in the setting of EVD.

## JOEL TAN

**Project:** The Role of MicroRNA-10a in Acute Myeloid Leukaemia Cell Survival

**Supervisor:** Dr Catalina Palma and Prof David Ma

**Summary:** Acute myeloid leukaemia (AML) is an aggressive cancer of the blood and with some exceptions, current treatments save less than half of suffers. Experimental observations indicate that AML development is a multistep process, requiring genetic insults to both increase proliferation or decrease apoptosis, and block differentiation in order to achieve full malignant potential. Using microRNA microarray, we have identified that microRNA-10a, a negative transcriptional and post-transcriptional gene expression regulator, is strongly overexpressed in AML compared to normal cells. Previous work in our lab has demonstrated that miR-10a has a pro-survival, pro-clonogenic role in AML (Bryant et al., 2012 Mol Cancer). The role of microRNA-10a in normal haematopoiesis is unknown.

My project aims to determine if microRNA-10a has oncogenic potential in the haematopoietic system, by examining the effects of miR-10a overexpression in haematopoietic cells. To examine this, leukaemic cell lines (generated from AML patients) were genetically manipulated to permanently over-express the miR-10a gene (or control genes), and stable cell lines were generated using Green Fluorescent Protein (GFP) as a selection marker. The microRNA expression levels were confirmed by TaqMan qRT-PCR. We hypothesised that miR-10a would confer a survival advantage to haematopoietic cells. The survival of these cells was thus assessed when challenged with the common chemotherapy agent Cytarabine Arabinoside or nutrient deprivation, where miR-10a was found to significantly affect cell survival. To support these results, primary human haematopoietic stem cells were isolated from mobilised peripheral blood, genetically manipulated

to over-express miR-10a, and cell survival assessed by flow cytometry. This study provides further evidence that miR-10a has important effects in the survival of haematopoietic cells, and further work is required to gain full insight into its mechanism of action.

## DANIEL TRAN

**Project:** Immunophenotyping of Plasma Cells

**Supervisors:** A/Prof William Sewell and A/Prof David Brown

**Introduction:** Polychromatic flow cytometry (PFC) is commonly performed on bone marrow (BM) samples when investigating plasma cell dyscrasias (PCDs) including multiple myeloma (MM). PFC efficiently immunophenotypes thousands of cells and can identify neoplastic plasma cells (PCs) based on aberrant surface expression and intracellular  $\kappa$ - $\lambda$ - light-chain restriction. Panels including CD38/CD138/CD45 for gating,  $\kappa$ - $\lambda$ - light-chains for clonality analysis and CD19/CD56 can detect up to 90% of MM. Aims. Firstly, to compare the performance of CD27, CD28, CD81, CD117, CD126, CD147, CD152, CD200 and CD229, to current markers (CD19, CD56) to assess their utility in identifying neoplastic PCs. Secondly, to assess PFC's contribution to investigation of PCDs through correlation with other investigative modalities.

**Methods:** Antibody panels including the new markers (CD27/CD28/CD81/CD117/CD126/CD147/CD152/CD200/CD229) were run on BM samples that came into SydPath for PFC analysis. Database analysis of BM samples at St. Vincent's hospital from 2008-2013 was conducted to allow correlation of PFC to other investigations.

**Results:** At 95% specificity thresholds the most sensitive markers in detecting monoclonal populations were CD19 (Sensitivity: 80%), CD126 (53%) and CD147 (47%). This confirms CD19's utility but surprisingly CD56 had a low sensitivity of 37%. Assessing the sensitivity of marker combinations, the CD19/CD229 and CD19/CD200 combinations had the highest sensitivities (90%). When CD19 was combined with CD126, CD147, CD27, CD28, CD56 and CD81 the sensitivities of these combinations was 87%. This study confirms the well-recognised observation that PFC underestimates PCs compared with morphology. However, preliminary analysis shows PFC remains a useful investigation with association with serum and urine electrophoresis (Independent t-test,  $p < 0.05$ ). Additionally, PFC correlated well with trephine (Phi correlation= 0.790) and aspirate analysis (Phi correlation= 0.558) in identifying monoclonal populations.

**Conclusion:** Analysis suggests the CD19/229 and CD19/200 combinations could be more useful in distinguishing monoclonal and polyclonal populations than the current CD19/CD56 combination, although further investigation is warranted in a larger sample size. Despite PFC's underestimation of PCs, PFC nonetheless makes a useful contribution in the investigative workup of PCDs as shown by its good correlation with other investigations. Additionally PFC may be particularly useful in cases of minimal residual disease where there are small PC populations or where polyclonal populations obscure small monoclonal populations.

# 2014 TEACHING OVERVIEW

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## 2014 TERM DATES

### Phase 1

Teaching Period 1: 3 Mar - 4 May  
Recess: 21 Apr - 27 Apr  
Teaching Period 2: 5 May - 29 Jun  
Recess: 30 Jun - 20 Jul  
Teaching Period 3: 21 Jul - 14 Sep  
Recess: 15 Sep - 21 Sep  
Teaching Period 4: 22 Sep - 16 Nov

### Phase 3

Summer Teaching Period: 13 Jan - 7 Mar  
Teaching Period 1: 10 Mar - 9 May  
Recess: 7 Apr - 11 Apr  
Teaching Period 2: 12 May - 4 Jul  
Recess: 7 Jul - 11 Jul  
Teaching Period 3: 14 Jul - 5 Sep  
Recess: 8 Sep - 12 Sep  
Teaching Period 4: 15 Sep - 7 Nov  
PRINT: 13 Oct - 21 Nov

### Phase 2

Summer Teaching Period: 13 Jan - 7 Mar  
Semester 1: 3 Mar - 27 Jun  
Recess: 18 Apr - 25 Apr  
Recess: 1 Jul - 18 Jul  
Semester 2: 21 Jul - 14 Nov  
Recess: 1 Sep - 5 Sep

## EXAMINATIONS

### Phase 3

Clinical: 17 & 18 September  
Oral: 23 & 24 September  
Portfolio: 30 September & 1 October

### Phase 2

25 & 26 November

### Phase 1

2 & 3 December



# POST GRADUATE REPORT

St Vincent's Clinical School continues to contribute to the growing post-graduate research at UNSW. Currently, UNSW has over 4000 higher degree students enrolled, many of whom are making important contribution to our understanding of life. Critical to this is the development of health sciences, which is where the St Vincent's biomedical precinct is excelling. 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, which has strengthened the translational research and post-graduate studies on the campus.

UNSW was again very successful with regards to the NHMRC funding. In the 2013 round UNSW received \$37 million in Project Grant funding from the NHMRC. This combined with the Program Grant funding means that UNSW has received a total of \$88 million in total NHMRC funding for projects commencing 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.

In a bit of common sense research into attaining NHMRC funding, the Research Strategy Office compared successful and unsuccessful grants and concluded: "Teams (as opposed to individuals) have a much higher probability of being funded. This is particularly obvious for teams of 3-5 CIs with a steep increase going from 3 to 5, which likely reflects the need to provide sufficient committed expertise to tackle major project objectives."; "The salutation of the first CI (Dr vs A/Prof vs Prof) is of little impact"; "The size of the budget is of no significance; and Grants which receive RSO (Research Strategy Office) support have a much higher probability of being funded."

The Garvan in conjunction with the St Vincent's Clinical School ran the campus' inaugural 3 Minute Thesis competition for the doctoral students in their final year. The finalists went onto the Faculty of Medicine 3MT competition. The winner of the Faculty 3MT was Alexandra McCorkindale

from the Victor Chang Cardiac Research Institute, who spoke on “Finding STOP signals to create a roadmap for heart development” and the peoples choice was Amy Nguyen, from the Garvan Institute, whose subject was “To eat or not to eat, that is the question. Congratulations to all those who competed. As it develops this will become a great forum to disseminate post-graduate work on the campus.

With the unstoppable progress of technology, UNSW looks to be moving towards electronic thesis submission. This will be an advance on many levels with improved storage, search and access capabilities in the library and what would appear to be a major reduction in the environmental impact! The hope is that this will be in place for 2014 thesis submissions.

I would like to thank the other PGCs, specifically, Dr Alessandra Bray (Garvan Institute), Prof Boris Martinac (Victor Chang Cardiac Research Institute (VCCRI)), and Dr Kersten Koelsch (SVH Applied Medical Research), all post-graduate students and supervisors for an excellent year. The signs are all there that 2014 will be even stronger.

Dr Mark Danta  
Postgraduate Co-ordinator

# GRANT WINNERS

## UNSW

The Clive and Vera Ramaciotti Foundation grant - \$75,000 awarded to Dr Lawrence Lee for “a synthetic biology approach to the study of bacteria’s molecular syringe: the type III secretion system”.

ARC Discovery Project - \$400,000 over 3 years - awarded to Dr Lawrence Lee for “Artificially building the bacterial flagellar motor”.

QIMR/ NHMRC Centres of Research Excellence - \$143,000 – awarded to A/Prof Reginald Lord for “PROBE-NET: The Progression of Barrett’s Esophagus to Cancer Network”.

NHMRC Career Development Fellowship - \$101,000 – awarded to Dr Lucette Cysique for “Understanding, detecting, monitoring and treating brain dysfunctions due to chronic immune diseases”.

UNSW MREII grant - \$109,000 – awarded to Dr Lawrence Lee to “build a custom programmable fluorescence microscope at the Kinghorn Cancer Centre”.

## UNSW GOLD STAR AND SILVER STAR AWARDS

Goldstar - \$40,000 awarded to Dr John Zaunders for “T Follicular Helper cells and Follicular Dendritic cells as an HIV Reservoir in Germinal Centres”.

Goldstar - \$40,000 awarded to Dr Tri Phan for “An intelligent 3D tracking microscope for in vivo single cell photoconversion and fate mapping using two-photon spectral barcodes”.

Goldstar - \$40,000 awarded to Prof Andrew Carr for “Statin Therapy or Protease Inhibitor Switching to Improve Hypercholesterolaemia in HIV-Infected Adults: a Strategic, Randomised Trial”.

Goldstar - \$40,000 awarded to Prof Sam Breit for “the role of the TGF- $\beta$  superfamily cytokine MIC-1/GDF15 in cancer growth and spread”.

## ST VINCENT’S CLINIC FOUNDATION GRANTS

Ladies’ Committee Sr Mary Bernice Research Grant – \$100,000 awarded to A/Prof Rajesh Subbiah for “Genetic determinants of electrocardiographic parameters”.

Adult Stem Cell Research Grant – \$100,000 awarded to Dr Sam Milliken for “Use of fibroblast derived stem cells to define the role of GATA1 and p53 in normal haematopoietic and leukaemic stem cells with trisomy 21”.

Tancred Research Grant – \$67,000 awarded to Dr Ann McCormack for “Insulin signalling pathway in cancer tissue of insulin-resistant, insulin-sensitive and type 2 diabetic humans”.

K&A Collins Cancer Grant – \$50,000 awarded to A/Prof Phillip Stricker for “Reducing unnecessary biopsies and missing less prostate cancers on biopsy through the use of MRI, PCA-3 & PHI in men with an elevated PSA”.

Thelma Greig Cancer Grant – \$50,000 awarded to A/Prof Anthony Dodds for “MicroRNA-155: A regulator of cell survival and maturation in Acute Myeloid Leukaemia”.

Di Boyd Cancer Grant – \$30,000 awarded to Prof Andrew Carr for “Immune responses to HPV-16 E6 and E7 and correlation with anal cellular abnormalities in homosexual men: Study of the prevention of anal cancer (SPAN) Immunology Substudy”.

Froulop Research Grant – \$30,000 awarded to Dr Paul Jansz for “Use of point of care coagulation testing to guide the haemostatic management of patients on Extracorporeal Membrane Oxygenation (ECMO)”.

Annual Grant 2 – \$30,000 awarded to Prof Peter Macdonald for “Pharmacological activation of the Nitric Oxide / soluble Guanylate Cyclase / Protein Kinase G Signalling Pathway as an approach to minimise Ischemia reperfusion damage to the donor heart”.

Annual Grant 3 – \$28,000 awarded to A/Prof Debbie Marriott for “Time is of the essence: Rapid identification and speciation of staphylococci from blood cultures using a new polymerase chain reaction technique”.

Annual Grant 4 – \$30,000 awarded to Dr Mark Danta for “MIC 1 in liver cachexia (MiLC) study - pilot study”.

Annual Grant 6 – \$30,000 awarded to Prof Richard Epstein for “Genetic engineering of cancer-resistant human cells by altering the CpG content of the TP53 tumour suppressor gene”.

Annual Grant 7 – \$15,000 awarded to Prof Andrew Carr for “Rosuvastatin versus protease inhibitor switching for Hypercholesterolaemia in HIV-infected adults”.

# UNSW CONJOINT STAFF APPOINTEES

AS OF 31 DECEMBER 2013

## PROFESSOR

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

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

Herbert Herzog  
David James  
Anne Keogh  
David Ma  
Peter Macdonald  
Boris Martinac  
John Mattick  
Elizabeth Musgrove  
Christopher Ormandy  
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Michael Rogers  
Katherine Samaras  
John Shine  
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Brett Courtenay  
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Anthony Dodds  
Louise Emmett  
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David Muller  
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Anthony Schembri  
Jacob Sevastos  
Leon Simons  
Phillip Spratt  
Phillip Stricker  
Rajesh Subbiah  
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Stuart Tangye  
Bernadette Tobin  
Yu (Brandon) Xia  
Deborah Yates

## SENIOR LECTURER

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Richard Baker  
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Yen Cheng  
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Kathryn Connolly  
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Christopher Pene  
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Nicholas Webb  
Phoebe Williams  
Brooke Wilson  
Edwina Wing-Lun  
Louis Winoto  
James Yeates  
Janice Yeung  
David Yeh  
Rudy Yeh

# CLINICAL SCHOOL

## STAFF MEMBERS



### **Professor Allan Spigelman**

Head of School & Professor of Surgery

**Commenced:** 2006

**Specialty:** Surgical Oncology

**Research Interests:** Hereditary Cancer; Clinical Governance/Patient Safety/Quality of Care/Risk Management



### **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**

Director of Medical Student Education; Associate Professor of Medicine & Director of Conjoint Liaison, Faculty 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**Dr Kumud Dhital**

Senior Lecturer in Surgery

**Commenced:** 2009**Specialty:** Cardiothoracic Surgery**Research Interests:** Transplantation;  
end-stage cardio-pulmonary failure**Dr Russell Clark**

Senior Lecturer in Medicine

**Commenced:** 2009**Specialty:** Geriatrics**Dr Mark Danta**

Senior Lecturer in Medicine

**Commenced:** 2006**Specialty:** Gastroenterology**Research Interests:** Viral Hepatitis;  
Hepatitis HIV co-infection**Dr Darren Gold**

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**ADMINISTRATIVE  
STAFF****Mrs Melinda  
Gamulin**Clinical School  
Manager**Ms Naomi  
Esselbrugge**Administrative  
Officer**Ms Julee Pope**Administrative  
Assistant**Ms Thuy Huynh**Administrative  
Officer  
(Clinical  
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