Researchers in the School of Medical Sciences have again enjoyed great success in the latest funding round from the NH&MRC – Australia’s peak body supporting health and medical research. In garnering 11 project grants worth over $5.3M, and a further three fellowships attracting $1.1M, our staff clearly showed their ability to contribute to the performance of the Faculty in terms of peer-reviewed research funding.

“Staff in SoMS have worked very hard to position themselves as leaders in the field of Australian biomedical research, and we are delighted their efforts have been recognised through these outcomes” said Prof Nick Hawkins, Head of the School. “Our success reflects the significant investment made by UNSW in staff and physical facilities over the past five year, and the effort, creativity and collegiality of our staff and students. We look forward to the completion in 2014 of works to revitalise the Wallace Wurth Building. The new facilities will provide the platform we need to advance our research in areas as diverse as chronic pain, spinal cord injury, hearing loss and the prevention of hepatitis C infection”. 
Congratulations to the CIA’s and their teams on their success in securing NHMRC funding in 2012:

- Rowena Bull
- Margaret Morris
- Gila Moalem-Taylor
- Bill Rawlinson
- Arun Krishnan
- Renee Morris
- Lu Liu
- Edna Hardeman,
- Matthias Klugmann
- Gary Housley
- Nigel Turner.

Fellowships where awarded to:

- Andrew Lloyd
- Bill Rawlinson
- Stephen Abbott

Australians working in medical research are motivated by contributing to the growth of knowledge about the human condition and to the development of better ways to prevent ill health and to treat patients who have become ill. A noble endeavour but the reality is that funding for medical research is largely dependent on the government. With so many claims on the public purse, governments are always faced with difficult choices between areas that need expenditure. In a shrinking public funding environment the real question is why invest in medical research?

It may be difficult to care about the economics of medical research when you are looking down a microscope or focused on the computer monitor however your ability to find a cure is, more often than not, linked to parliamentary ‘bean counters’ and they do care. So here are some facts you may find interesting about medical research and the economics thereof.

A recent study by Lateral Economics concluded that, between 1992-93 and 2004-05, expenditure on Australian research and development returned a net benefit of approximately $29.5 billion. The report also noted that “given the exceptional returns to investing in Australian health and medical research, it makes sound economic and social sense for Australian governments to commit to substantially expanding such investment, and to encourage other funders to do so as well.”

The study reported that for every dollar invested in Australian research and development activities, an average of $2.17 in health benefits is returned (confidence range of $0.57 to $6.01).

18% of NHMRC research grants leveraged funds from international funding bodies. For example, in 2009 alone, Australian researchers received a total of $13.9 million from 43 US-National Institutes of Health grants.

The commercial return can be significant. Cochlear P/L built on the original invention of the ‘bionic ear’ from the work of Prof Graeme Clark and his colleagues, reported a net profit after tax of $130 million for the 2008/09 financial year.

And on the productivity front, healthier people are better able to participate in work, in society and in family and community life. When there is less ill health in the community, national productivity can improve...
A Matter of Degrees

Congratulations to completing HDR students, and their supervisors, in 2012. We wish you well in future endeavours.

- Si Wei An, supervised by Levon Khachigian
- Mehala Balamurali, supervised by Miles Davenport
- Jocelyn Bowden, supervised by Penelope McNulty
- Sian Cartland, supervised by Wendy Jessup
- Vanni Caruso, supervised by Margaret Morris
- Enoch Chan, supervised by Shane Thomas
- Virginie Deswaerte, supervised by Wendy Jessup
- Xian Ming Du, supervised by Wendy Jessup
- Ehsan Ghahramanloo, supervised by Steve Boutcher
- Lincoln Henry Gomes, supervised by Carolyn Geczy
- Hui Yee Greenaway, supervised by Vanessa Venturi
- Jeff Hook, supervised by Peter Gunning
- Sharpley Hsieh, supervised by John Hodges
- Dhaksinari Hulugalle, supervised by Merridee Wouters
- Sindy Kueh, supervised by John Morley
- Monica Kurniawan, supervised by Vanessa Venturi
- Leanne Luong, supervised by Pascal Carrive
- Nor Azahri, supervised by Levon Khachigian
- Hoai Nam Nguyen, supervised by Andrew Lloyd
- Jignya Hitesh Patel, supervised by Trudie Binder
- Sultana Rajia, supervised by Margaret Morris
- Stefanie Reyes, supervised by Kay Double
- Gayathri Sundaram, supervised by Gilles Guillemin
- Jie Zhang, supervised by Glenda Halliday
- Anna Zinger, supervised by Gilles Guillemin

The Important Thing Is Not To Stop Questioning
-----Albert Einstein
October this year saw likeminded researchers gather at the 8th Annual Newcastle Asthma Meeting (NAMe8). The objective of the conference - to develop the best management strategies and to identify, develop and test novel and effective treatments and cures for asthma, chronic obstructive pulmonary disease and other airways diseases.

Alex Shadie, who is a 2nd year PhD researcher, attended NAMe8 to share his findings on the links between asthma and pollution, a subject he is passionate about, citing the fact that there is a clear correlation between asthma and air pollution. “People with asthma can experience an exacerbation of symptoms when exposed to high levels of air pollution, the presentation I gave described a new mouse model of asthma, which mimics many of the features seen in this form of the disease,” Alex commented.

He was awarded the prize for Best PhD Presentation for the delivery of his research. The title of Alex’s presentation: Environmental particulates as a trigger for acute exacerbations of allergic asthma.

This accolade didn’t come as a surprise to his supervisors Prof Rakesh Kumar and Dr Cristan Herbert. “Alex is a hard-working and enthusiastic PhD student, who also works part-time as a research assistant in the lab, and is a casual tutor in Pathology courses for undergraduate Sciences students,” said Rakesh. “Alex’s work has progressed remarkably well over the last two years: he has been fortunate that many of his experiments have yielded unambiguous results and interesting findings. He spoke clearly and confidently at the Newcastle Asthma Meeting. No one listening would have realised this was his first public presentation on his research!”

“It was very pleasing to win given the quality of the other presentations,” said Alex. “It was a nice way to finish a very enjoyable and informative conference.”

Alex also presented his findings at the Australian Health and Medical Research Congress (2012) in Adelaide this November.
The purpose of the Faculty of Medicine Dean’s List is to acknowledge the achievements of undergraduate and postgraduate students who have made a significant contribution to teaching, research or community activity within their respective areas. Acknowledgement through the Dean’s List is the highest award made by the Faculty to a student.

Christine Shiner will be taking her place this year on the Dean’s List for her outstanding academic record. She sets a high scholastic bar and then consistently smashes her own benchmark. Christine is taking on the world’s leading cause of disability - stroke. “There are approximately 15 million strokes suffered every year,” Christine explains. “Impaired movement on one side of the body is the most common outcome after stroke and limits the independence of more than 50% of stroke survivors. Since there is no cure for stroke, the only way to improve function and restore independence is through rehabilitation.

“It is now known that changes or ‘reorganisation’ of the brain is critical for the success of post-stroke rehabilitation. I will be conducting a multi-disciplinary investigation to examine in detail the nature and extent of these changes, and how they can be enhanced by a novel upper-limb therapy. Brain imaging will be used to visualise the brain and its activity. Non-invasive stimulation of the brain using a magnet will also be used to investigate how the brain communicates both within itself, and with the body. Finally, I will conduct a study to look at the influence of particular genes on stroke and the process of recovery,” Christine said.

Dr Penelope McNulty is justifiably proud of the success of her PhD student. "Christine is a self-motivated student with a natural aptitude for research. She has demonstrated an exceptionally high standard of critical thinking that has translated into mature written and oral presentations," said Penelope. "Christine’s self-initiative and problem-solving skills have seen her master conceptually complex projects. She is logical, methodical and organised. Her contributions to the laboratory team are thoughtful and well-reasoned and she continues to provide strong support to other group members across a range of projects.”
If you were told you would pass your exams without having to sit them, you’d probably wonder what the catch was. For SoMS research fellow, Gila Moalem-Taylor, the catch was surviving seven weeks of Scud missile attacks during the 1991 Gulf War.

An undergraduate student at The Hebrew University in Jerusalem at the time, Dr Moalem-Taylor had endured long nights of official warnings to stay indoors when she decided to risk a drive to a friend’s house.

“All of a sudden I see a great Scud missile flying above me and heard it landing a few streets away [with a] big boom,” she recalls. The fear that Iraq would use chemical weapons against Israel had prompted the Israeli government to issue gas masks to the public. Undeterred by the explosion, Moalem-Taylor pulled to the side of the road, put on her gas mask, and then continued the 10-kilometre journey to visit her friend.

“Unfortunately, they were already in the insulated room as instructed and didn’t open the door. I went back home driving with that mask, which I tell you is very inconvenient.” For Moalem-Taylor and her classmates, the university’s decision to cancel several exams and award all students a pass was one of the few good things to come out of the war.

Hearing this cool-headed account, one wonders if under-
graduate life in a warzone might also have helped Moalem-Taylor develop the nerve to endure life as a grant-funded researcher. “The last year of every contract feels like being on borrowed time,” she admits. “I clearly remember that already in 2003, shortly after arriving in Australia, I worked as a research officer with Professor David Tracey, who had funds to employ me for one year only. At that time I was very pregnant and I thought that there is no way I can find a job with that big tummy. Luckily, I was then awarded the Vice-Chancellor’s Postdoctoral Fellowship. Since then, I face the same challenge almost every three to four years, but I have been lucky so far.”

Despite the uncertainty, the intellectual stimulation of a career in research has been a big drawcard. “I am driven by curiosity,” Moalem-Taylor says. “I am also motivated by the idea my work might one day help pain sufferers. Research on chronic pain is challenging, but getting supporting emails from neuropathic pain sufferers and hearing their stories at pain conferences is both touching and motivating.”

The freedom to pursue new ideas is also something Moalem-Taylor values about her job. But she fears the pressure on academics to secure grant funding drives some to play it safe and limit their horizons. “For me academic freedom was one of the more appealing aspects of this career path. However, I feel that academic freedom, creativity and exploration are compromised by increased paperwork, regulation and applications to various university committees as well as a tendency to go with safe projects that will be accepted by peer review and supported by funding agencies.”

Whether Moalem-Taylor’s career has been sustained by luck, fearlessness or a combination of the two, it has led her to several rewarding discoveries on the role of the immune system in chronic pain. “A recent highlight is the discovery that a subpopulation of immunosuppressive T-lymphocytes can attenuate neuropathic pain in animal models,” she says. “This knowledge might be used for identifying target molecules or cells for therapeutic purposes in reducing chronic pain.”

Moalem-Taylor’s advice to young academics reinforces the impression that her successes owe a lot to her ability to endure hard times: “Research is tough, experiments usually don’t go as you plan and negative results can be discouraging, but don’t give up. Do not discard the unexpected findings; they could be tomorrow’s novel discovery. Think widely; don’t be afraid of ideas outside of the mainstream.”
Well it has been a busy year in Health and Safety! Beginning on the first day with the introduction of the new "Work Health and Safety Act", that began to standardise H&S between the states and across the country. This dropped the "Occupational" and broadened the definition of a “Worker” to include contractors, volunteers, trainees and others along with changes such as a new approach to risk management and higher penalty charges. We even had an opportunity to select how H&S would be represented within the School and the L3 committee became a "Consultation" committee with a new constitution. The L3 committee also changed to a quarterly frequency of meetings and was now ably supported by a new H&S officer, Blathnaid Farrell, from the far away rainy island of Saints and Scholars. The University online risks and hazards reporting system, accessed through MyUNSW, began to work correctly and successfully increased automated email traffic within the university. I also congratulate our winner, Chris Riordan, for hazard reporting in the recent Safe Work Australia Week.

Work on the new building began with many offices, research and teaching laboratory relocations. This process required de-commissioning and reorganising of H&S procedures, safety information and paperwork, a process to be repeated next year with the new building. The building work itself has required changes to building evacuation and other procedures, who cannot forget the exciting daily 3 pm testing of the emergency system and the novelty of what dust and noise would greet you on a daily basis.

Teaching Semester 1 began with the introduction to all undergraduate student course notes new standardised "Student Risk Assessments", identifying that inexperienced students would not be aware of the risks and hazards present in class that they would never have experienced before. This also established the importance of H&S in their future scientific careers. Many thanks to the Teaching Committee, course coordinators and laboratory support staff for their help with this process.
As we finish the teaching year and building work now commences on the old WW building there will be a variety of new H&S challenges for 2013. Relocation into the new building in the middle of next year should provide an opportunity for all those labs that have been "putting off" their SWP and RA monitoring to get these updated and in order. We should all see this as an opportunity to throw out our outdated H&S paperwork and begin in a new building with new H&S. Along these lines in preparation for the big move we have already begun to consult with Lowy building on H&S issues that arose in moving into their new home.

With the "hazy, lazy, crazy days of summer" now approaching, I remind everyone that during this period many of the emergency personnel will not be around and that the school has a strict working after hours protocol, that require approval beforehand and not on the day of your actual experiment.

"Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhoea. May cause systemic toxicity with acidosis. May cause central nervous system depression, characterised by excitement, followed by headache, dizziness, drowsiness, and nausea. Advanced stages may cause collapse, unconsciousness, coma and possible death due to respiratory failure."

On a serious note, I am proud to say that SOMS has long been held as a model for H&S within the faculty and the university. This status has not occurred without an ongoing commitment to H&S by all staff and students within the school, in particularly I thank the L3 committee members, research support officers, Blathnaid and Nick for establishing and maintaining a culture of safety in the workplace. I wish everyone a safe and happy holiday break.
10 Things You May Not Know About Amanda Craig

My worst job was...
- It’s a choice between two – smearing poo onto culture plates or chipping ice off cauliflowers

What is your favourite food?
- Chocolate

What is the most favourite concert that you have been to?
- UB40

If I could be anyone besides myself I would be…?
- Lara Croft or Max Guevera

If you had to sing a karaoke song what would it be?
- Hahaha, you wouldn’t be able to tell as my singing is so bad – ask anyone in the lab

What are your pet peeves?
- Empty bottles in the fridge

My last meal would be….
- Not for a really long time I hope

What do you most enjoy about your profession?
- I love that people in science will freely share their ideas/experience/knowledge with you and will sincerely ponder problems that you encounter.

What is your special talent (eg: swimming, cooking etc)
- Collecting children, we have 7.

How do you spend your free time?
- Collecting children

Dr Amanda Craig is employed within the Department of Physiology. Her research interests are centered around stroke and she facilitates in the med program, and teaches in Frontiers in Neuroscience.

Amanda can be contacted at amanda.craig@unsw.edu.au
The EnSpire Multimode plate reader is an easy-to-use platform for quantitative detection of light-emitting or light-absorbing markers in research and drug discovery applications.

The EnSpire has several detection technologies including:

- Fluorescence;
- Absorbance;
- Optical biosensor label-free;
- Ultra-sensitive luminescence;
- Time-resolved fluorescence and
- Alpha technologies in microplates up to 384-wells.

The EnSpire has been designed for diverse user needs, and it includes an ‘easy-to-use’ touch screen to reduce assay start-up times, and simplify protocols across a wide array of applications. For reliability and convenience, protocols and results are stored in a database. Result files are stored as Microsoft Excel compatible files or graphical format. Files can also be printed or exported into a network.

You can perform the following assays with the Enspire:

**Reporter gene assays:** When you need to measure transcriptional activity of cells, EnSpire provides the features needed for reliable detection of reporter genes such as luciferase with comprehensive scanning and kinetics capabilities. It supports GFP assays with readings from below.

**Enzyme assays:** The instrument allows for fast analysis of activity and kinetics for enzymes such as Kinases, Proteases and Caspases etc

**Receptor ligand binding assays:** Fast-reading EnSpire is ideal for detection of effects of ligand-receptor binding such as interaction of GPCR and their ligands.

**Cellular assays:** Scanning and kinetics for cellular assays such as cAMP, Ca2+ influx and any ADME/tox assays.

**Genotyping assays:** Such as fast detection of single nucleotide polymorphisms.

**Alpha technology assays:** This is an ideal tool for screening of broad range of targets. It provides an easy and reliable means to determine the effect of compounds on biomolecular interactions and activities. This technology offers the possibility to assay many biological activities including low affinity receptor-ligand interactions, detecting second messenger levels, and detection of peptides, proteins, sugars and small molecules.

**Other applications include,** Image FlashPlate assays that measure radioactive samples, Label-free assays for receptor-ligand screening and time resolved flurometry assays.

If you would like to learn more about the Enspire please contact Hongyan An h.an@unsw.edu.au.

Location: 524 Wallace Wurth


Carolyn’s comments: This paper is the culmination of a number of projects conducted in collaboration with researchers at The George Institute for Global Health and The Children’s Hospitals in Sydney, Melbourne and Brisbane, to answer the question “Should children with haemophilia play sport?”

While the benefits of physical activity and sport in children and adolescents are well known, the problem for children with haemophilia and their families, is balancing the known benefits with the risks of bleeding episodes, particularly bleeds in to joints which ultimately cause joint destruction. This risk has not previously been quantified.

We followed 104 boys with haemophilia for a period of one year. The study showed that vigorous physical activity was associated with a moderate, transient increase in risk of bleeding. For sports with limited contact (e.g. soccer & basketball) the bleeds risk is approximately 3 times greater than when inactive, and for contact and collision sports (e.g. rugby and wrestling) the bleeds risk is approximately 4 times greater than when inactive. Despite this, because the overall time spent engaged in vigorous sporting activity is small compared to the total number of hours in a week, the absolute increase in bleeds risk is small. Administering clotting factor before sport also reduces risk - for every 1% increase in clotting factor level, bleeds risk was reduced by 2%.

The data from this study will be used to create a freely-available online bleeds calculator to assist parents of children with haemophilia to determine the effect of changes in physical activity patterns on bleeding rates. Here is the link to the media article that appeared in the Chicago Tribune: [http://www.reuters.com/article/2012/10/09/us-small-risk-in-rare-bleeding-disorder-idUSBRE8981BT20121009](http://www.reuters.com/article/2012/10/09/us-small-risk-in-rare-bleeding-disorder-idUSBRE8981BT20121009)

“SUMOylation of GTF2IRD1 Regulates Protein Partner Interactions and Ubiquitin-Mediated Degradation.” PLoS One. 7(11): e49283. PMID: 23145142

This paper is Jocelyn Widagdo’s first as a primary author and is work that contributed to the completion of her PhD under the supervision of Dr Stephen Palmer and Prof Edna Hardeaman. It reports important new developments in the biochemistry of a transcriptional regulator (GTF2IRD1) that plays a pivotal role in the human genetic disease Williams-Beuren syndrome (WBS). Evidence shows that GTF2IRD1 may be responsible for the highly distinctive behavioural abnormalities of WBS and our work aims to reveal the basis of this link between genetics and human behaviour. Jocelyn showed where and how GTF2IRD1 undergoes SUMOylation and the consequences this post-translational modification has for protein-protein interaction and ubiquitin-mediated degradation. This work opened up a new dimension for the WBS field and helps to cement our role as major players in the understanding of the molecular and cellular basis of the disease.
Library Update

New Research Publications database
UNSW Library is collating research related author identifiers as a part of the implementation of the Research Publications (ResPubs) replacement system. These identifiers, such as Thomson’s ResearcherID and Scopus Author ID, will form part of a strategy to automate publication data entry as much as possible.

Please fill in the attached short form with your details: www.surveymonkey.com/s/LBNR5MT

Scopus Author ID
If you have publications in the Scopus database you will have a Scopus Author ID (which has been automatically created for you.) If the ID is correctly set up all the publications belonging to you will be listed. If publications are incorrectly assigned you can inform Scopus of this.

Sometimes Scopus creates multiple profiles for an author, you can request to merge these profiles.

Researcher ID
If you would like a Researcher ID profile you will need to register via www.researcherid.com

Researcher ID profiles incorporate data and metrics from Web of Science. Creating a Researcher ID account will enable you to manage your Web of Science publication list.

ORCID
ORCID (Open Researcher and Contributor ID) aims to provide a persistent digital identifier for researchers. It may become an industry standard.

This scheme could prove to be an overarching solution to the problem of author disambiguation and the multitude of author identifiers that have emerged in the absence of such a solution.

You can register via orcid.org/register

Congratulations to the successful Gold Star awardees:

ёт Shane Thomas
Redox control of the immune regulatory enzyme indoleamine 2,3-dioxygenase
ёт Thomas Fath
Regulation of synaptic function by the actin cytoskeleton in the central nervous system
ёт Matthias Klugmann
Central glucagon-like 1 receptor as a mediator of the effects of drugs of abuse
ёт Gary Housley
Role of TRPC ion channels in ischaemic brain injury
Citation Classic Award

SF Ng, RCY Lin, DR Laybutt, R Barres JA Owens, MJ Morris (2010) Chronic high fat diet in fathers programs beta cell dysfunction in female rat offspring. Nature, 467(7318): 963-966. This paper has received more than 117 citations in 2 years.

Pharmaceutical Medicine & Drug Development Program Authority

The School welcomes Dr Orin Chisholm who is taking on the responsibility for the delivery and development of this widely recognised and highly respected program that provides postgraduate education in all aspects of the drug development pipeline, from discovery to regulatory affairs.

Info Day 2013

Thursday, 3rd January 2013, has been selected for the annual UNSW Info Day. We are looking for academics who wouldn’t mind donating a couple of hours to helping students get more out of their university experience. If you can help out the School, please contact our Student Advisor, Carmen Robinson and she will provide all the necessary information about the day and schedule a time for you to assist. Thanks in advance to all staff who give their time for this worthwhile endeavour. You can reach Carmen at carmen.robinson@unsw.edu.au, call her on 9385 2464 or drop in to the BSB Office in the biological sciences building.

On the Lighter Side

For more information or to send comments, suggestions, events notifications and items for future editions please contact: The School of Medical Sciences, Head of School Office. Tel: 02 9385 2531 or email s.dacre@unsw.edu.au
Every year around this time the University, the Faculties and various Schools, Centres, Facilities and Departments have the greatest pleasure in recognising the contributions made by individual staff members. This year, of course, is no exception. But did you know about the Postdoctoral Academy Awards?

These Awards are a part of the UNSW Postdoctoral Academy Program that is a collaboration between the faculties of Science, Medicine and Engineering. The program enables postdocs and research fellows to meet and hear interesting talks from some the Universities leading researchers and professional staff.

Professor Denis Wakefield - Associate Dean (Research) Medicine, emcee’d the inaugural Postdoctoral Academy Awards on Thursday 6th December 2012.

One Award that attracted a lot of attention was the Supervisor of the Year Award. We are delighted to be able to advise you that it was a SoMS staff member who took out this coveted prize - Prof Gary Housley.

Gary was nominated by postdoctoral staff in the Faculty of Medicine.

Other staff members who have been honoured for their contributions were announced by the Faculty of Medicine.

It is with great pleasure we are able to advise that both Drs Ben Barry and Angela Finch have had their hard work and efforts recognized.

Ben received the UNSW Medicine Award for Teaching Excellence 2012,

Angela received an Outstanding Contributions to Student Learning nod.
Last But Not Least

Dean's Awards

Further on the Awards front we are able to announce the recipients of the Faculty of Medicine Dean’s Awards for 2012. These Awards are the highest accolade attainable within the Faculty of Medicine and celebrate the achievements of consistently high performing staff members.

SoMS was delighted to have a number of staff members and students included in this year’s Dean Awards. The ceremony for the conferring of the Awards was held on Wednesday 28th November 2012.

The hard work and effort of these members of the SoMS community is appreciated.

Dean List

Acknowledgement on the Dean’s List recognises students who have made outstanding contributions in their respective areas.

Kate Polglaze
Fiona Kumfor
Katherine Davies
Christopher Antoniadis
Ashley Woodbury
Kathleen Leaper
Christine Shiner

Theses students received their Awards for outstanding research endeavours.

Dean’s Award for Professional and Technical Staff

This is the highest Award made by the Faculty for dedicated professional and technical staff who have made outstanding contributions in their area.

Dr Edwin (Chai) Lim
Vicky Sawatt

Dean’s Rising Star Awards

This Award acknowledges outstanding achievements of post doctoral staff and early career researchers within their respective fields.

Dr Rowena Bull
Happy Holidays