



School of Medical Sciences NEWSLETTER

Never Stand Still

Medicine

Medical Sciences

Oct/Nov 2014

In This Edition

- Associate Professor Promotions
- Exercise Physiology Training Tomorrow's Champions
- SafeSys

Regular Segments

- Staff Profile: Patsie Polly
- 17 Things You May Not Know About : Balu Daniel
- Use It Or Lose It
- Paper of the Month
- News In Brief

Generations To Come

[S Dacre](#)

UNSW's GERRIC program featured in the *Sydney Morning Herald* recently. Of particular interest was the relationship between GERRIC and Matraville Sports High School where enrolments have been dropping since the introduction of a specialist sport stream in the School in 2001. This dip in student numbers is part of a falling trend in six of the seven state public sports high schools over the last four years.

Matraville Sports High has teamed up with UNSW in a bid to counteract the idea that the School is just for 'sporty kids' and that children interested in scholastic pursuits should be attending other educational institutions within the area. UNSW, through GERRIC, provided six scholarships for Matraville's highest performing pupils to attend their three-day holiday program for gifted students. Katherine Thompson, who co-ordinates the program, hopes it will raise aspirations

at the south-east Sydney school, where many students come from disadvantaged backgrounds.

Ken Ashwell is proud to teach in the GERRIC holiday program for gifted students. In fact, his course on the brain is the only one from within the Medicine Faculty. "These kids are bright," he says. "They are engaged and you can see that they are intellectually ready for experiences at a high level."



continued on page 2

The year 7-10 students are taught about the brain and the human nervous system in general. Ken captures their imagination by asking what their understanding is of the brain and its function. He empowers them to, in part, lead the discussion from the outset. “We then go as a group to the dissecting room and

discuss expected outcomes. We do the same with the brain in health and disease,” he says. “When I ask about abnormalities of the brain the students are quick to reel off conditions such as ADHD, autism and Alzheimer’s. When we discuss specimens from the pathology museum, I’m able to get them thinking in terms of tumours,

vision for these bright kids and that is to put UNSW on their radar. “I would like to think that when they are considering their futures they remember their time at UNSW fondly. These are the type of students that we would be proud to have attending the University,” says Ken.



Anatomy Museum to look at the anatomical models. The kids can interact with these and are encouraged to ask questions to enhance their learning,” Ken says. “I have noticed that one of the items that’s always popular is the patellar reflex hammer. It’s very satisfying to see these kids truly switched on and employing their mental inquisitiveness.”

Miraca Gross, director of GERRIC, has seen students as young as 14 years enrol at university. While some question whether acceleration leads to social isolation from peers, Miraca’s research shows that gifted children relish the opportunity of performing at a higher level rather than “dumbing down” to fit in with their age group.

Ken endorses this opinion. He sees first hand their enthusiasm for scientific inquiry. “The three days that I have them we look at such things as the spinal cord and what it does. We then review it in trauma and

cerebral infarction and haemorrhages.”

Ken has been teaching into the GERRIC school holiday program since 1996. He was first encouraged to do so by the now Emeritus Prof Phil Waite who co-taught this group of children with him. The reason that he continues to do so is simple - because it is fun.

On Psychologytoday.com, David Palmer advises that all children (all people really, big and small) have an inborn desire to learn about the world around them - to seek out new experiences, figure out the relationship between themselves and their surroundings, to discover, and to learn. What distinguishes gifted children from others is the apparent natural ease and joy with which they go about doing this. Their brains appear to be mental sponges, effortlessly absorbing and incorporating new information and ideas.

Katherine and Ken share a common

Sara Berger was one of the Matraville Sports High School pupils that spent time with Ken undertaking his brain workshop. Sara was surprised to learn that she had been identified as gifted and did not mind spending part of her school holiday at the university. “They let you do stuff of your own free will and don’t force you to do things. They make it fun,” the 12 year old said. “I’ve only started thinking about [university] recently when I found out I was in gifted and talented.”

Anyone interested in providing short courses for the GERRIC program, or interested in learning more about how they can help gifted or talented students, is welcome to contact Katherine Thompson at Katherine.thompson@unsw.edu.au or by calling 9385 1979.

In this year's round of promotions Associate Professor it was particularly pleasing to see that all staff who applied from the School of Medical Sciences were successful. It isn't often that life chooses to deliver us with a 100% success rate but if it is going to happen at all then fate could not have chosen a better time than during the academic promotional calendar period.

We are delighted to welcome the new A/Prof's effective from 1st January 2015:

- ✿ Stewart Head
- ✿ John Hunt
- ✿ Andrew Moorhouse
- ✿ Patsie Polly
- ✿ Nigel Turner

It's A Long Way To The Top But Not For These 'Guys'



Mission Control

research endeavours with the aim of research findings being translated into clinical treatments.

On 8th October, A/Prof. Matthias Klugmann of the Translational Neuroscience Facility attended the launch of the Mission Massimo JOINT STRIKE VECTOR project; a project to develop animal models and gene therapies for the recently identified leukodystrophy HBSL.

Mission Massimo presented Matthias with funding to allow him to commence the vital work towards developing a therapy for this debilitating condition. Initially the project will construct a vector to transport a working copy of the DARS gene for Condition 0 (HBSL). This proof of concept platform will then be adapted for use on other ARS genes encoding tRNA synthetases in the future. Stephen continues to work tirelessly

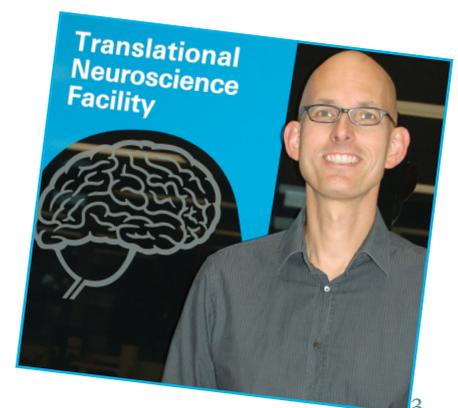
for the promotion and cure of Leukodystrophy. He is passionate about sharing his family story in the hope that it will encourage public awareness of these diseases and raise money for ongoing research.

“My team and I feel very privileged to have the opportunity of being able to contribute to the next phase of the ‘mission’ to find a cure Massimo and all others like him,” said Matthias.



Leukodystrophy refers to a group of genetic disorders that affect the myelin of the central nervous system. These diseases are progressive, meaning they tend to worsen throughout the life of the patient. They most often occur during childhood with many losing the ability to see, walk, hear, sit up or even to swallow. There is no cure for Leukodystrophy at this time, but thanks to foundations like Mission Massimo there is hope for the future.

Like many philanthropic foundations Mission Massimo has been founded by Stephen Damiani; the father of Massimo, a Leukodystrophy sufferer. The fund raising activities of Foundation are channelled into





Staff Profile

Patsie Polly is a senior lecturer in Pathology and a Group Leader of the Cancer Cachexia Mechanisms Research Group and has a particular expertise in underlying gene regulatory mechanisms in muscle wasting. Cancer cachexia occurs in 50-80% of cancer patients and is directly responsible for 30% of all cancer mortality. At present there is no means of early diagnosis or effective therapy. Patsie has developed approaches to the identification of biomarkers in skeletal muscle wasting. She hopes to use them to better understand the regulation of genes involved in this important process.

How would you describe your research?

I have two research arms: Lab Based Medical Research. I work on the molecular basis of the wasting away that occurs in patients with cancer. This process, known as cancer cachex, is mediated by inflammatory molecules that cause down-stream gene regulatory changes that results in muscle (both skeletal and cardiac) breakdown, weakness and wasting. If you can recall Steve Jobs, of Apple fame, at the end-stage of his pancreatic cancer disease, he was emaciated, weak and appeared aged. This is cachexia and it is the cause of 30% of cancer deaths.

Education research: I have created novel assessment strategies to enable research communication skills in undergraduates, virtual lab development for learning technical skills and related concepts, ePortfolio use to build professional skills for our science students.

How did you pick your research field, what inspired you in this direction?

I loved learning about how transcription factors work so I made it my business to understand how altered gene expression can be implicated in disease.

What have been your career highlights to date

1. Travelling to Strasbourg from Duesseldorf with my research group at the time (circa 1998) to the research institute run by Professor Pierre Chambon (a leading molecular biologist who used gene cloning and sequencing technology to first unravel the structure of eukaryotic genes and their modes of regulation). 2. Being a recognised international research fellow Alexander von Humboldt Fellow (Germany – 1997-1999) and a Japan Society for the Promotion of Science Fellow (JSPS – 2002). 3. My favourite was getting the UNSW VC's award along with my graduating cohort of UNSW Honours students at the June 2013 graduation ceremony! A real gem!

What are the major challenges you have faced?

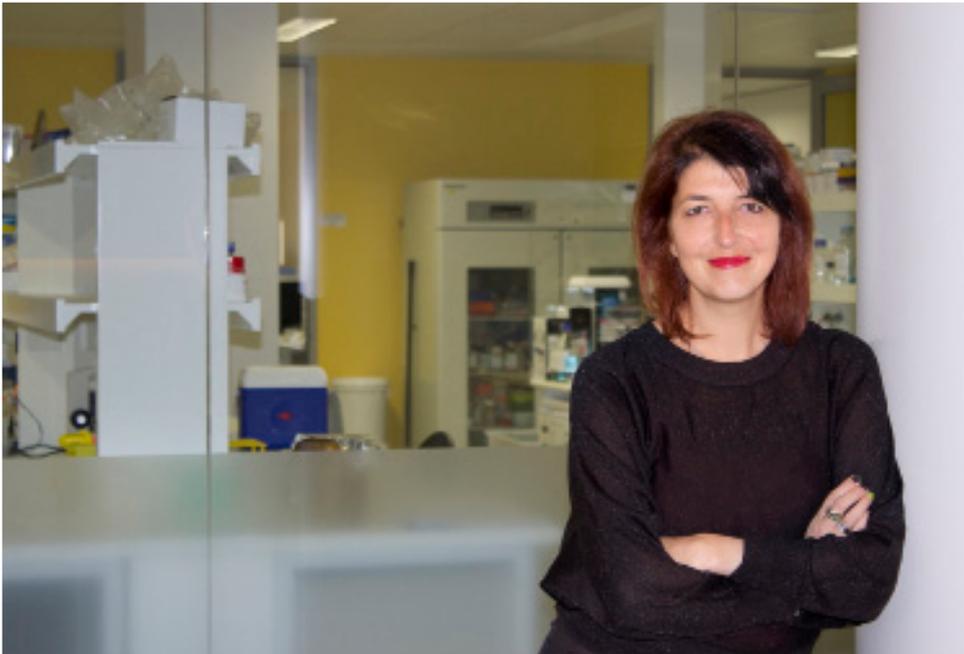
Lack of early career mentoring. Thankfully Rakesh Kumar has come to the rescue in that department! Resuming career pace after having my two girls. Two 6 month maternity leaves probably translated into a 4-5 year loss in momentum.

What motivates you to do what you do?

Excellence, innovations that work and making change.

What makes your heart sing?

Watching my students develop and grow. Watching



my kids develop and grow. Same fuzzy feeling and tears of joy - I love it.

Who has most influenced you in your career and life decisions?

Career - Research - Carsten Carlberg (1st post-doctoral supervisor); Academia - Rakesh, Career/Life Nick Golfin-Husband, Olga Polly-Mum/hair-dresser and business woman extraordinaire!

How do you maintain work/life balance?

I don't. No such thing if you are a career woman. However, the key is a good husband or partner that 'gets you', understands your goals and aspirations and can relieve the pressure of juggling.

How has your career path been easier and harder than you anticipated? Or your peers in other careers?

Harder for research, easier for teaching. Must be personality driven. Definitely funding driven. My peers in other careers seem to cruise compared to research driven academia. Not sure if they are that satisfied though.

Describe where you are and where you would like to be in your career

I am in a great place at the moment. I have my own lab, I have successfully trained so many people/students and have some good degree of success.

If you could change three aspects of your life, what would they be?

1. Be funded so I can spend more time researching and teaching rather than applying for \$\$, 2. fitness train like I did when I was a post-doc (ha!), 3. worry less, not get angry.

What lessons would you draw from your work to pass on

to the next generation of researchers?

1. Perseverance and passion make an awesome cocktail. Engage in both and you will succeed. 2. When you think you are not good enough, look at what you have and then think again. 3. Be strategic and focus on your goals and aspirations.

Who is the real Patsie Polly?

I grew up in Paddington/Darlinghurst raised by my grandma Maria and two awesome, young energetic parents. Yes, Darlo Public Primary School behind the Victor Chang Research Institute was where it all started! Sydney Girls High followed by BSc 3970 at UNSW.

Current family. I met my husband at high school; yes Sydney Girl meets Sydney Boy-took 10 years to work through the distractions but finally married.

I have two gorgeous girls, Antonia (12 yrs), Orlanda (9yrs) who will change the world! These girls do things I can't: ballroom dance at gold medal qualification, shoot goals in netball, win swimming and running races and get to district carnivals, represent their school as captains in sport and student councils, are great academically, behave in public (so far) and catch bloody big waves at Bondi!! Husband Nick is the rock and foundation, always smiling, supportive, runs half-marathons – yes, we 'hate' him sometimes!

Pets. No pets as yet, 2 cavoodles on the way apparently.

Hobbies/areas of interest. Meditation and yoga, learning about Ayurveda - a system of *Hindu* traditional medicine native to India; travel and developing an understanding of ancient cultures and civilisations. Buying weird shoes, dying my hair more than one colour, eating out and story-telling-everyone's got a good story!

SOMS STAT LAB

THE SOMS STAT LAB IS NOW OPEN FOR SOMS
STAFF & STUDENTS
LOCATED LEVEL 4SW RM 453A



As the custodians of the STAT Lab, the HMU will ensure gloves, lab gowns, Mounting media, coverslips, safety goggles, timers and staining reagents are provided

for your use. Every Monday morning HMU staff will replace reagents ensuring quality staining and access to everything you may require at your fingertips.

You will need to provide your own slide holders, slide boxes, dry ice and/ or liquid nitrogen, aqueous mounting media and DAPI

To access the STAT lab, contact the HMU staff on x52529 to arrange Lab induction and training. If not already registered on the HMU online booking please register at <https://hmubookings.med.unsw.edu.au/>.

To use the cryostat, simply log onto the HMU booking system and reserve the equipment with the date/time you desire.

There is no cost to SOMS staff for the use of this facility

The following items may be purchased from the HMU at cost price
Slides \$35 -100/box
OCT \$40 per bottle

Equipment/Facilities

De-waxing workstation
Dehydrating workstation
H&E staining workstation
Nissl stain
Manual Coverslipping workstation.
Leica Cryostat .
Wet microscope
Sharps and glass waste bins
Safe working procedures,
Risk assessments and Staining protocols

All laboratory users must be induction into the STAT LAB and agree to comply with all laboratory rules.

All users must read and sign the SWPs and RA.

Users for Staining Area must sign -in on Staining Area Register on every occasion.

No bare feet or exposed, open footwear are permitted.

Food or drink is NOT PERMITTED at any time in laboratory.

Tampering with or removal of any laboratory equipment is strictly forbidden.

Users must clean and tidy their work area when they have finished.

Please contact HMU to discuss any additional needs.

Providing your feedback will ensure this facility meets everyone's requirements!

Dr Maria Sarris 9385 2469

m.sarris@unsw.edu.au



Medicine

17 Things You May Not Know About Balu Daniel



What's your earliest memory?

My father who passed away when I was in Year 12. I was just getting to know him as a teenager. This event changed my life

What's your most treasured possession?

The family – my mom, siblings, wife and kids

My worst job was...

The door-to-door selling that I did when I moved to Australia in 2004. Being thrown out of a pub at Revesby by a couple of drunks who have had a bit tooo...much!!!

Do you have any pets?

I have a strong liking to ornamental fishes. Used to make some petty cash breeding siamese fighter fish while at University in India – 2 decades back!!

Where did you grow up?

At Chennai – a coastal city in the southern part of India, known to have the third longest beach in the world (The Marina Beach)

What is your favourite food?

Dosa (pancakes made with ground rice flour paste) withpaya (a type of curry made with lamb/goat legs – the tibia)

What is your special talent (eg: swimming, cooking etc)

Cricket, like most Indians!! I was a batsman who could bowl medium pace

Have you ever met a famous person?

It was great chatting with Glenn McGrath a year back at my son's cricket club

What is your most embarrassing moment?

Realising that I had forgotten to order rats for a medicine physiology practical with the teacher and the students waiting for the practical to start. Luckily, the teachers were very understanding and we were able to postpone the prac. At least I made the students happy!!

How do you spend your free time?

Beer, watching TV and listening to music with family and friends.

What languages can you speak?

The local Indian languages – Tamil and Telugu. Good to know at least 2 out of the 26+ languages in India.

How many cities have you lived in?

One of those fortunate ones to live in coastal cities - Sydney now, Chennai and Visakhapatnam (a beautiful city along the Bay of Bengal – south of India)

What cartoon character best describes you and why?

Used to enjoy watching Charlie Chaplin (though he was not a cartoon character). A great entertainer but I've read that he had a difficult childhood.

What was the last book you read, movie you saw, TV show you watched

(pick one or all)?

At present reading Stephen Boutcher's 20 x 3. Trying hard to get rid of the belly fat.

What do you most enjoy about your profession?

Great work environment, flexible working hours, new challenges every day, friendly work colleagues, and the list goes on...

If I could be anyone besides myself I would be...?

Michael Jackson – used to admire his dancing and song writing skills.

If you had to sing a karaoke song what would it be?

I like the 80's and 90's music – Elton John, Beatles, John Denver, Simon and Garfunkel, George Michael. No prizes for guessing the ringtone on my mobile – Careless Whisper!!

FACT BOX

Balu Daniel is senior technical officer in the School of Medical Sciences. He is responsible for the SoMS wet teaching labs on level 1 WW and exercise physiology. His technical team looks after teaching practicals for physiology, pharmacology. They also assist with some activities for pathology. If you would like to contact Balu you can do so by calling 9385 2553 or emailing d.balu@unsw.edu.au

MAY

Arne A. Ittner, Josefine Bertz, Tse Yan Becky Chan, Janet van Eersel, Patsie Polly, Lars M. Ittner

“The nucleotide exchange factor SIL1 is required for glucose-stimulated insulin secretion from mouse pancreatic beta cells in vivo” *Diabetologia*, DOI 10.1007/s00125-014-3230-z.

The paper by Arne Ittner and colleagues is the first report on a role of Sil1 in the regulation of insulin secretion. While baseline secretion of insulin is not altered in Sil1 null mice, Arne showed that peak secretion of insulin in response to increased blood glucose levels is critically dependent on the presence of Sil1. Mechanistically, this is linked to changes in ER function.



JUNE

Veronica Ho, Rakesh K Kumar & Gary Velan

“Online testable concept maps: benefits for learning about the pathogenesis of disease” *Medical Education*, 48: 687–697.



This paper was the result of Veronica Ho’s ILP in 2013, supervised by Gary Velan and co-supervised by Rakesh Kumar. The paper describes a randomised crossover trial of online testable concept maps relating to pathogenesis of disease covered in the Phase 1 Health Maintenance A course last year. The article is significant because it is one of the few studies in medical education that demonstrates a moderate to large effect size for an intervention, and indicates the potential for widespread benefits of such concept maps for learning in a variety of disciplines. *Medical Education* is the top-ranked journal in the field. Veronica has also been awarded a student prize by the Australia and New Zealand Association of Health Professional Educators (ANZAHPE) for this work, which she presented at the ANZAHPE conference in July.

JULY

Matthew Jones, John Booth, Janet Taylor and Benjamin Barry

“Aerobic Training Increases Pain Tolerance in Healthy Individuals” *Medicine & Science in Sports & Exercise*, 46(8): 1640-7.

This is Matthew Jones’ first research paper from his Masters work. The paper is published in a high ranked journal for Physical Therapy, Sports Therapy and Rehabilitation and provides the first evidence that aerobic exercise training can directly influence pain sensitivity, specifically pain tolerance, in healthy individuals. This finding suggests a new psychological aspect of exercise adaptation that has not been demonstrated previously. That is, increasing the tolerance of afferent feedback associated with metabolic disturbances in muscles might contribute to enhanced endurance performance. An improved understanding of the mechanisms by which exercise influences pain sensitivity, particularly in patients with chronic pain, may better inform exercise prescription and the concurrent use of analgesic medications in these patients.

Indicative of the novelty of the finding, media coverage of this paper has included a column in the *New York Times* and articles in *Prevention*, *Men’s Fitness* and *Women’s Health* magazines. Matthew is currently completing a PhD in SoMS following up on the mechanisms and clinical application of the findings from this paper.



Rahul Mohan, Andrew Tosolini and Renee Morris

“Targeting the motor end plates in the mouse hindlimb gives access to a greater number of spinal cord motor neurons: an approach to maximize retrograde transport” *Neuroscience* 274: 318–330.

This is Rahul Mohan’s first research paper based on his honours work as well as his first year of PhD candidature. All work was performed at the Translational Neuroscience Facility.

The study showed that for the first time the motor end plates of the hindlimb muscles in the mouse have been characterised and specifically targeted in order to achieve maximal uptake into the corresponding motor neurons in the lumbar spinal cord. The results have great potential to be of use to achieve therapeutic benefits at both the peripheral and central aspects of the motor unit in various mouse neuromuscular disease- as well as spinal cord injury- models.

SafeSys



Tired of being bogged down with health and safety paperwork? Can't find someone to sign-off on a document? Need to write a risk assessment for a standard laboratory technique or equipment? SafeSys is here to help!

Blathnaid Farrell

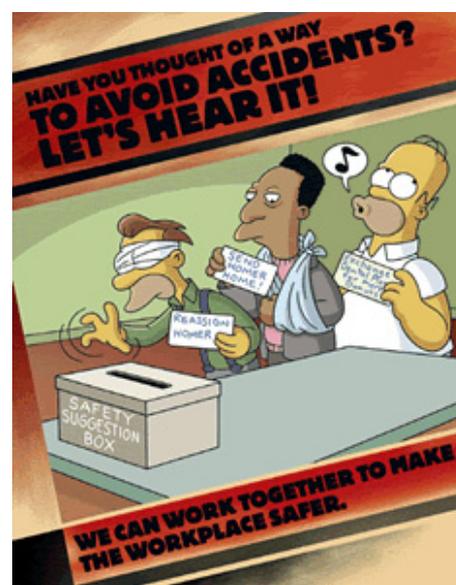
SafeSys is the new electronic system for managing safe work procedures (SWP), risk management forms (RMF) and equipment maintenance. SafeSys currently has over 700 SWP/RMF, with about 20 new ones being added each day by schools across UNSW.

All SoMS staff and students now have access to SafeSys and can use it to search and create safety documentation. If someone has already created a SWP/RMF similar to your needs, you can clone this and make it specific to your needs thus cutting down on lots of time. Otherwise, start with the blank template which is the same as the current [HS017 Risk Management Form](#) and [HS026 Safe](#)

[Work Procedure Form](#) with some areas pre-populated and lots of hints/tips. Your supervisor can approve the document electronically, so you no longer require their signature. Other staff/students can electrically declare that they have read the SWP/RMF, so you don't need their physical signature. From now on if you need to create or review a SWP/RMF this should be done in SafeSys.

Access SafeSys here: <https://safesys.unsw.edu.au>

Full instructions on how to use it are in the [Help and Knowledge](#) pages, alternatively contact your Research Support Officer (RSO). For further details see the [SafeSys information page](#)



UNSW Medicine Learning and Teaching Forum

The last Medicine Learning and Teaching Forum for the year will be held on Wednesday 10th December between 9am and 2pm. The venue for the event is Wallace Wurth LG02.

Lunch will be included in this forum and will be at 1pm following on from the announcement of the UNSW Medicine Teaching Awards ceremony.

Detail on how to register for this forum will be circulated by the Faculty of Medicine mid November.

UNSW Announces New Vice Chancellor in 2015

David Gonski

As you are aware, over the past few months we have been engaged in a global recruiting process to find a new President and Vice-Chancellor, following the decision by Fred Hilmer to step down after eight years in the role.

An appointment has now been made. Professor Ian Jacobs, a distinguished UK academic, has accepted the position and will take up the role on 1 February 2015.

Professor Jacobs is currently Vice-President and Dean of the Faculty of Medical and Human Sciences at the University of Manchester and head of the Manchester Academic Health Science Centre. He is also an internationally renowned researcher in the area of women's health and cancer.

I believe this is an outstanding appointment for the University. Professor Jacobs has extensive leadership experience at both Manchester and University College London. His significant record as a strategic leader, with more than a

decade of leadership experience gained at two of the world's elite research intensive universities, makes him an ideal choice to lead the University in the years ahead.

This was a very intensive recruitment process, with a number of highly qualified candidates from both Australia and overseas – a testament to Fred's leadership, which has left UNSW in such a strong position. The selection committee, which I chaired, was drawn from members of the University Council. A meeting of the full Council unanimously approved the appointment on Monday.

Fred has kindly agreed to stay in the post until the end of January 2015 to ensure a smooth transition. Obviously there will be a number of opportunities for staff to farewell him later in the year.



International Collaboration

SOMS recently hosted two visiting scientists, Jitendra Sinha and Shampa Ghosh from the National Nutrition Institute, India, who were working with Margaret Morris. Jitendra was supported by the International Brain Research Organisation, and Shampa by the International Neurochemistry Society.



Use It Or Lose It

Neurolucida / Stereo Investigator



This piece of equipment consists of an epifluorescence BX51TRF Olympus microscope connected to a computer workstation running two softwares: Neurolucida and Stereo Investigator from the company MBF bioscience. The microscope is equipped with a camera and a motorised stage which are controlled by the computer. There is also a second computer workstation running the same softwares, but it not connected to the microscope. This second workstation is used to analyse data acquired with the other

workstation. It also runs Adobe Photoshop and Illustrator. The equipment was bought at the end of 2010 on an MREII grant.

The camera and the motorised stage allow automation of many tedious and time consuming tasks inherent to histological analysis. The softwares allows photographing, plotting, measuring and reconstructing objects at different magnifications, overlaying multiple fluorescent images, making virtual slide, tracing neuronal dendrites and making

3D reconstruction. The system is extremely versatile and when used properly allows new forms of histological analysis that were not possible before. Stereo Investigator is designed for stereological analysis and is the one that is used most. Neurolucida is more specifically designed to reconstruct single neurones and their dendritic fields.

Location : Room 332, Level 3 East Wing, Wallace Wurth Building
Custodian: Associate Professor Pascal Carrire

Have You **RSVP'd** for the Social Event of the Year

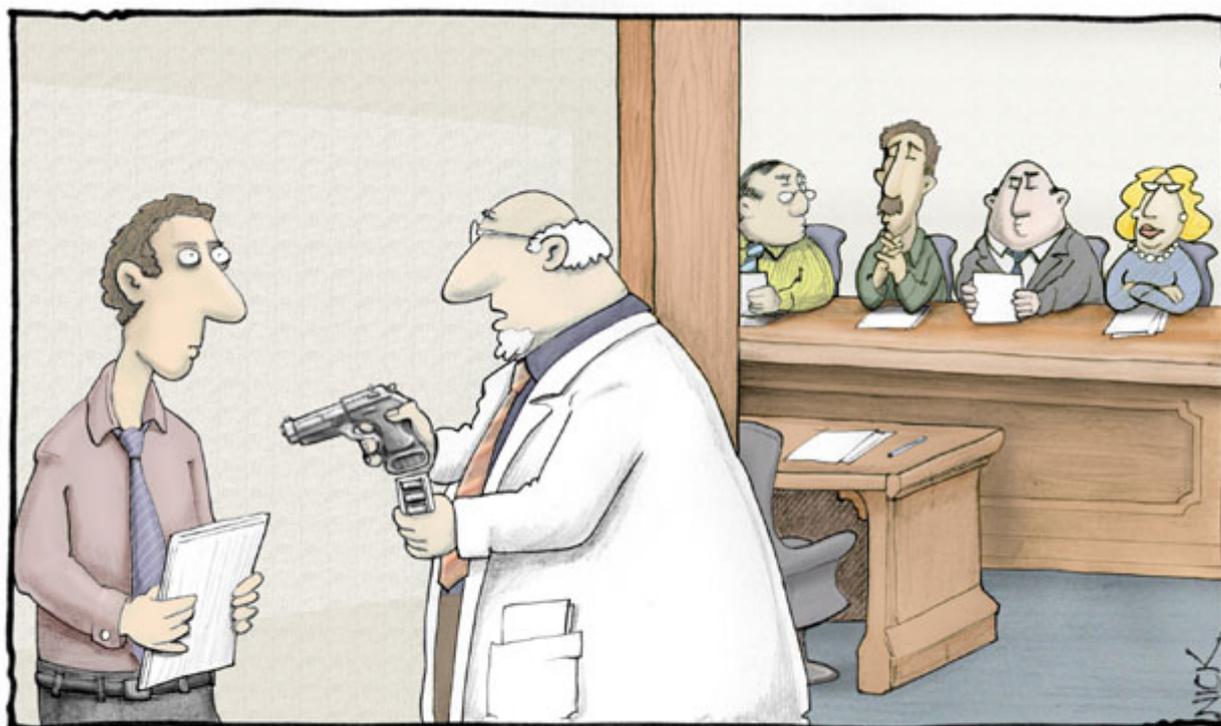


Date Thursday 11th December

Venue Wallace Wurth Atrium

Time 3pm to 6pm

please RSVP your attendance to s.dacre@unsw.edu.au



"Change of plan. The policymakers say they're only willing to listen to the science if we can present our ideas in simple bullet-point format."

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



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Medical Sciences
Medicine