Welcome to the March edition of the clinical school newsletter with the first exciting quarter of 2015 well and truly underway and plans for expansion and redevelopment at Westmead closer to realisation.

The Chancellor, Belinda Hutchinson AM and Deputy Chancellor, Alec Brennan AM visited the Westmead Precinct on Monday, 23 March. As part of the visit, Professors Sorrell and Liddle led a tour of Westmead Hospital, including the Clinical School and the proposed area for new teaching and learning space in the old cafeteria on level 1, below the lecture theatres. There was a photo opportunity as the Chancellor and Deputy Chancellor observed Westmead students practising their surgical scrub and gown technique in the clinical skills lab.

Importantly, The University of Sydney is a strategic partner in the Westmead Hospital Redevelopment Project and other projects within the Westmead Precinct. This will result in a sizeable increase in the number of students and range of disciplines taught on the Westmead campus, as well as new teaching facilities. In addition there are plans for a multidisciplinary Innovation Hub to help shape the future of health care, locally, nationally and internationally.

The University has earmarked $50 million as a contribution to the Phase 1 redevelopment, with long term plans to invest $500 million, growing its education and research contribution on the Westmead site significantly over the next twenty years.

DATES FOR YOUR DIARY....
5 April: Daylight savings ends 3am (turn your clocks back 1 hour)
25-31 May: Vivid Sydney at the University
27 May: Medical Student Grand Rounds
3rd World/Rural Australia Elective Presentations

Happy Easter
2015 Australia Day Honours…

One of the first awards for 2015 was the Australia Day Honours, with Prof Jeremy Chapman being awarded an AC.

Congratulations to Prof Chapman for being the first person from Westmead to receive this highest of accolades.

Welcome to Stage 3 Students by Westmead Association…

We appreciate the ongoing support of the Westmead Association with the annual Welcome to Stage 3 Student Luncheon held on 5 March 2015.

Students and staff enjoyed lunch and the relaxed atmosphere arranged by Georgette Hanna.

Welcome New Staff…

Welcome to Rekha Ravi-Indran who has recently joined us and will be working alongside Sam Saha in the Finance Department three days per week on Monday, Wednesday and Thursday.

2014 Student Awards…

We are extremely proud of the following Westmead students for achieving Awards for 2014:-

Dean’s List of Excellence in Academic Performance

- Rohan Dalal;
- Daniel Guilfoyle;
- Jayson Jeganathan;
- Shibalk Misra;
- Minh Ahn Nguyen; and
- Daniel Scherman

Media News…

Prof Steve Vucic will shortly be featured in a Ten News interview regarding the PBS listing of a new drug that is halting the progression of Multiple Sclerosis.

Appointments & Promotions…

We congratulate the following colleagues on their recent appointments:-

- Clinical Senior Lecturer Winny P Varikatt;
- Clinical Senior Lecturer John Kwan;
- Clinical Senior Lecturer Stephen Li;
- Clinical Lecturer Susanna Thomas,
- Clinical Associate Lecturer Michael Su;
- Clinical Associate Lecturer Vishnu Subramanian;
- Honorary Associate Ushasree Pattamatta;
- Honorary Associate Ji Eun (Shelley) Hwang;
- Honorary Associate Charlotte Thomas; and
- Postdoctoral Fellow Amita Limaye

Teacher of the Quarter…
Westmead Clinical School students, from Years 1-4, were asked to nominate their favourite teacher in recognition of their contribution to student teaching during the past quarter.

We are pleased to announce that, from a competitive field of nominations, Dr Andrew Henderson from Neurology has been nominated as the Teacher of the Quarter for March 2015.

Elective Term Scholarships 2014/15...

The following students’ were awarded scholarships from the Westmead Charitable Trust Fund for 2014/15 for placements in Third World or Rural Australian Medicine:-

- Jeremy Sutherland – A&E at Lautoka Hospital, Fiji & CareFlight NT;
- Kieran Webb-Sawyer – ID at Hospital Regional de Cusco, Peru;
- Sonya Thomas – General Medicine, Surgery & O&B at Duncan Hospital, Raxaul, India;
- Kit Rowe – A&E at Lautoka Hospital, Fiji;
- James Blair-Swannell – A&E at Lautoka Hospital, Fiji

Don’t miss the Clinical School’s Medical Grand Rounds presentation on 27 May, when three of these recipients will present their elective experiences.

Emergency Medicine Interest Group (EMIG)....

EMIG has made a big start to 2015, with much more to come! So far we’ve had two events: Med 1 Meet & Greet in February and EMIG Critical Care Careers in March. Med 1 were introduced to EMIG on two separate days where they could meet the ED doctors and observe some practical procedures. We had an overwhelming interest and EMIG welcomes the new Med 1’s who have an interest in emergency medicine.

EMIG ran their first Critical Care Careers event in March.

Over 60 students attended and heard from consultants from the disciplines of emergency, anaesthetics, intensive care and pre-hospital / retrieval medicine. This event facilitated conversations between the consultants and enthusiastic senior medical students who are considering a career in critical care, while teaching some procedural skills.

Thanks to all Westmead staff who volunteered their time to help out in both of these hugely successful events.

EMIG is looking forward to 2015 with workshops in disaster medicine, obstetric emergencies, suturing and simulation - keep an eye out on our Facebook group for the dates as they get finalised!

EMIG is student-run and led by Nathan Harvey (Stage 3) and Dr Andrew Coggins
to facilitate interest and learning in the field of emergency medicine. It is open to medical students from Sydney University as well as other interested students. You can contact EMIG via our email address contactemig@gmail.com and keep up to date via our Facebook page.

Westmead Student Surgical Association (WSSA)…..

So begins a new year for the Westmead Student Surgical Association! We hope to bring much energy and enthusiasm into our events this year as we help to facilitate the medical student experience in surgery.

This year kicked off with the Upper Limb Anatomy Crash Course lecture given by Will Ziaziaris- a great lecture for first years in the midst of their upper limb anatomy lectures, and a snap refresher for everyone else.

I would like to welcome the 2015 Committee for the WSSA:

- Co-chairs: Harry Constantin and Mona Liu;
- Stage 3 representatives: Vijay Seevaratnam, Will Ziaziaris and Jacob Cao;
- Stage 2 representatives: Preethi Pampapathi, Vincent An and Kevin Phan; and
- Stage 1 representatives: Benjamin Howes and Vivian Wu

Events to come include an Introduction to Surgery event in late April, as well as our first suturing event for the year in early May. Looking forward to seeing everyone there!

Mona Liu
Westmead Student Surgical Association
Co-chair

Teaching Opportunities…

As you may know, we are continually seeking tutors for all stages of the course.

If you are interested in teaching, please contact Dr Amanda Harrison on 9845 6403 or email amanda.harrison@sydney.edu.au at the clinical school to discuss possibilities further.

We are happy to provide letters recognising your teaching contribution which can be included with your CV.

This quarter, we particularly require tutors for:-

- Communication skills and history taking (Med 1 & 2) for the upcoming Musculoskeletal Sciences, Respiratory, Endocrine, Nutrition, Sexual Health & Renal blocks;
- Clinical Reasoning Sessions (CRS); and
- procedural skills.

Thank you to all those junior and senior doctors who are assisting our students in practising their long case skills.

Thank you also to the many new and enthusiastic interns who are making themselves available to assist us with procedural skills teaching. We greatly appreciate their support.
Seven things you need to know on an “Unconventional Convention” in Antarctica...

Dr Amanda Harrison from the clinical school recently attended an Unconventional Convention trip to Antarctica from 21 February to 16 March 2015. Travelling from Ushuaia on the seven storey Akademik Sergey Vavilov with around 120 passengers and crew, the convention included medical and dental presentations throughout the journey covering a variety of topics.

1. The Drake
The closest town to the Antarctic Peninsula is beautiful Ushuaia – the “city at the end of the world”. The journey begins with navigating out of a harbour at 2am, with a mountain range under the water and making the two-day crossing of Drake’s Passage. If you’re lucky, it’s the calm and peaceful “Drake’s Lake”. If you’re not - like us - it’s the “Drake’s Shakes”, with the rise and fall of the boat responsible for random bouts of sea-sickness. Order your scopolamine patches online well before you go so that you’ll be alert enough to place your bet on the timing of the first iceberg! There’s a bottle of something very quaffable for the winner. (PS You’ll most likely have your sea legs on the way home.)

2. Adventure-wear is definitely not designer chic
Several layers of undergarments, merino-wool tights and jumpers, woolly hats, fat gloves and three pairs of socks in your gumboots covered with wet-weather gear and life-jackets doesn’t make for elegance and class, but sure keeps you warm and dry. As an added plus, it protects against penguin guano if you happen to slip while visiting a colony of inquisitive chin-straps.

3. Penguins have “protected space”
You will be warned not to approach penguins, to allow them a space of at least 4m, not to walk on penguin paths and, under no circumstances, let a baby penguin use you as a babysitter. If a mother penguin offers you her first-born (“Psst! Ten hot chips and the kid’s yours!”) just run away. Penguins don’t run fast but they have amazing stamina and determination! Also be careful with seals, sea lions and whales although their intentions are usually more culinary.

4. Glaciers
Glaciers are very beautiful and make great photos. Unfortunately they are constantly moving, (even if it’s at a sloth-like pace) and you will hear creaking and groaning as crevices and caves open and close. If you hear this, it is ok to just keep doing what you’re doing. If you hear a prolonged rumble RUN uphill as fast as you can in your stylish gumboots as it means a part of the glacier is going to fall into the sea and make a wave that is the Antarctic equivalent of a tsunami. This is called “calving” and I witnessed it happen but sadly without my camera. The photo is the “after” shot. To see an extreme example try: https://www.youtube.com/watch?v=hC3VTqlPoGU
5. Dressing to drink?
As part of the conference, we attended the Vernadsky Ukrainian research base, sold to the Ukraine by the British in 1996 for a symbolic £1 coin. The coin is still embedded in the counter of the Faraday Bar. We discussed extreme medicine with the doctor who had just begun his tour of duty at this base. His impressive mix of expertise included trauma surgery, infective diseases and psychiatry.

The later is a necessary skill for the 25 or so researchers who will “winter over” in the dark supported by one annual food drop and homemade 40% proof vodka! A free glass is available to any woman who donates an undergarment to the already-impressive decorations behind the bar. (Surprisingly, we did have a couple of people take advantage of this offer.) There is a church and a post office on base but we expect a long delay in the mail delivery!

6. Be careful what you bid for!
One Ocean, our tireless and gentle carers on the boat, support several charities and an auction was held on the last night in Antarctica. The generosity shown by our colleagues was amazing. As an example, we had a bid of US$750 to drive the boat for an hour. The slightly nervous winner, watched by a gaggle of passengers, was gently guided by the sub-captain, who was exceptionally calm given the forecast of powerful storms and strong winds as we crossed the Drake for the second time.

7. You have to see it to understand it
There is nothing I can write that will prepare you for the beauty, the majesty and the wonder that is Antarctica. Nor can I say enough about the enormous significance of this amazing place to us and to our planet. Instead I can offer you a small sample of the delights of “Iceberg Alley” to whet your appetite and hopefully kindle the spark of adventure!
Student News.....

Congratulations to Year 3 student, Nicky Brown, who married Daniel Wilton on Saturday, 7 February 2015, at Summer Hill.

Vivid Sydney at the University of Sydney....

Vivid Sydney will be held this year from Friday, 22 May to Monday, 8 June 2015, with the University of Sydney campus to be transformed by lights from Monday, 25 May to Sunday, 31 May 2015.

The Vivid Path to the Future is an expanded week-long program at the University and will include 3D-mapped projections on the University’s Quadrangle façade, light art along the main promenade, and Sea of Hands interactive installation.

As part of New Wave Sound, the Seymour Centre will explore the interface between music and gaming through exhibitions and performances.

Sydney Medical School Events....

Please see the Sydney Medical School website for 2015 Events which may be of interest to you.

International Medical Student Elective Report...

Sarah Langlands - University of Edinburgh
Emergency Medicine - October 2014

I had been looking forward to my 4 week placement ED placement at Westmead for almost a year and it had finally arrived! After a friendly welcome from all of the staff I was very quickly ushered to attend a resus call where I got stuck straight in! The rest of the month seemed to continue like this; there was always lots to do in the ED. The staff were more than willing to teach you, in particular practical skills, and there was never a shortage of cannulas to be sited. I even got the chance to go on a visit with the air ambulance which was an incredible experience!

Aside from the emergency department, Sydney was a beautiful city which needed exploring! I definitely made the most of my weekends – visiting the Blue Mountains, numerous beaches and of course you...
can’t come to Australia without getting a photo with a koala. Some other medical students and I were even lucky enough to borrow one of the ED doctors’ cars and took a road trip to the beautiful Palm Beach (where Home & Away is set!!!).

Overall, I had an unforgettable experience at Westmead and it has helped me decide that emergency medicine is the specialty for me! I will definitely be coming back to Australia again, hopefully next time for a bit longer than 4 weeks!

Laura Beaton, Melbourne Medical School
Immunology - January 2015

This elective placement provided a variety of clinical experiences within the Immunology and Rheumatology departments however what I learned was not limited to these two fields. I participated in the inpatient care of a long term immunology inpatient which included assessment of capacity and psychiatry consultations. I experienced the outpatient multidisciplinary care of patients with rare conditions. These consultations involved many family members and discussions and education around the science of genetic diseases and testing and treatment options. I had the opportunity to contribute to the Rheumatology department by assisting the resident as her proxy intern while the registrar was on leave. During this attachment I got to practice my clinical skills as well as assess a variety of non-rheumatological conditions.

I also spent time with the clinical diagnostic and research immunopathology and immunology teams where I got to understand the science behind the tests that are ordered and reported. This was highly valuable revision of academic learning and practical insights into the logistics of diagnostics. I got to appreciate the rarity of Westmead Hospital having registrar positions for both clinical and laboratory roles.

Overall my time at Westmead was enjoyable and informative – a highly recommended elective placement.

Postgraduate Student Unit...

Research Seminars
Congratulations to our PG Research Seminar Winners who will compete for the ‘Young Investigator Awards’ to be held in November.

- February – Kris MA (Centre for Cancer Research/Haematology)
- March – Farzan BAHIN (Endoscopy/Storr Liver Centre)

Congratulations to our winners, both presentation and lucky door, and thank you to those students who supported the seminars thus far.

Awards
Congratulations to Carolina FIRACATIVE ROPERO (CIDM) who not only received her PhD award from the Faculty of Medicine in February (without emendations) but also received a Georg Forster Research Fellowships (HERMES) from the Alexander von Humboldt Foundation to undertake postdoctoral fellowship during 24 months in the Institute of Immunology, University of Leipzig, Germany.

Presentations – International & Local
Congratulations to Nimeshan GEEVASINGA (Neurology) on his upcoming conference presentations for 2015:

- Oral presentation on ‘Novel Diagnostic Algorithm in ALS’, Australian and New Zealand Association of Neurologists, May.
• Invited Speaker for the Society of Neuroscience Conference, Chicago, Nov 2015, on ‘Insights on UMN dysfunction from TMS’.

Congratulations to Vyoma Patel (Surgery) who has presented both late last year, and has an upcoming presentation this year:
• Attended the National Atherosclerosis Meeting, State of Heart held in Adelaide, November 2014 and gave an oral presentation (Young Investigator session).
  
AAS 2014 Title: Expression profile of adhesion and chemokine markers on monocyte subsets and their correlation with atherosclerosis
Authors: Vyoma Patel, Helen Williams, Heather Medbury
VBRC, Westmead Hospital, University of Sydney, Australia
• Abstract has been accepted for a poster presentation at International Society of Atherosclerosis meeting (ISA) to be held in Amsterdam, Netherlands, May 2015.
  
ISA 2015 Title: Expression profile of adhesion and chemokine markers on monocyte subsets and their association with atherosclerosis
Authors: Vyoma Patel, Helen Williams, Stephen Li, John Fletcher, Heather Medbury
VBRC and ICPMR, Westmead Hospital, University of Sydney, Australia

1 poster:
• Utility of Universal and Selective Endoscopic Submucosal Dissection strategy for large laterally spreading colorectal lesions

1 video:
• Deep Mural Injury following Endoscopic Mucosal Resection of large laterally spreading colorectal lesions: recognition, detection and management

Grants/scholarships
NHMRC
The NHMRC Postgraduate Scholarships (PGS) scheme supports outstanding health and medical graduates early in their career so they can be trained to conduct research that is internationally competitive, and develop a capacity for original independent research within Australia.

The Postgraduate Scholarships are very competitive and offered to a limited number of graduates of outstanding ability who wish to make research a significant component of their career. This year NHMRC received 215 Postgraduate Scholarship applications of which 69 have been awarded funding.

Congratulations to the following Westmead Postgraduates on their scholarships:
• Dr Ming-Celine Dubosq
• Ava Tan-Koay

Publications
Congratulations to Victoria Sublette (Storr Liver Centre) who has just had her 3rd paper published. The paper is being published by the Journal of Psychology & Health:

Abstract:
Objective: This study explores the perceptions of patients receiving treatment for Hepatitis C to determine what factors influence their decision to commence treatment, ability to maintain adherence and complete their treatment program.

Design: Semi-structured interview techniques were used in a qualitative study of 20 patients undergoing treatment for Chronic Hepatitis C (CHC).

Main outcome measures: To explore patients’ perceived barriers and facilitators of Hepatitis C treatment adherence and completion.

Results: Analysis of patient interviews identified four key themes: (1) motivations for commencing CHC treatment – fear of death and ridding themselves of stigma and shame; (2) the influential role of provider communication – patients reported that information and feedback that was personalised to their needs and lifestyles was the most effective for improving adherence to treatment; (3) facilitators of treatment adherence and completion – social, emotional and practical support improved adherence and completion, as did temporarily ceasing employment; (4) barriers to treatment adherence and completion – these included side effects, stigma, a complicated dosing schedule and limitations of the public healthcare system.

Conclusion: To increase treatment adherence and completion rates, a patient-centred approach is required that addresses patients’ social, practical, and emotional support needs and adaptive coping strategies.

Congratulations to Zebennessa RAHMAN (Neurology) for her article in press accepted by epilepsy and Behavior.

Ms. No.: EB-15-15R1
Epilepsy in primary brain tumour: The impact on mood, cognition and HRQOL

Abstract:
Background: Primary brain tumour (PBT) is often a fatal disease of the nervous system and has a serious impact on health related quality of life (HRQOL). Presence of epilepsy and adverse reactions from tumour and epilepsy treatments may cause additional decline in HRQOL.

Objectives: To study the impact of epileptic seizures on cognition, mood and HRQOL in patients with brain tumours related epilepsy.

Materials and method: Patients were grouped in an ordinal scale with an epilepsy burden from none to severe based on the presence of epileptic seizures and seizure frequency; L1: No epilepsy; L2: Epilepsy, seizure free in last 6 months with antiepileptic drugs; L3: Epilepsy, at least one seizure in last 6 months with AEDs. HRQOL was measured by Functional Assessment of Cancer Therapy – Brain (FACT-Br) and Quality of Life in Epilepsy-31 (QOLIE-31) tools, cognition by Montreal Cognitive Assessment tool (MoCA) and Frontal Assessment Battery (FAB), mood by Hospital Anxiety and Depression Scale (HADS), activities of daily living (ADLs) by Barthel Index (BI) and performance status by Karnofsky Performance Status (KPS) in patients with primary brain tumours at least one month following neurosurgery with or without radiotherapy and chemotherapy.

Results: 81 patients with a diagnosis of primary brain tumours were recruited.
68% patients were diagnosed with primary brain tumour related epilepsy. 50.61% patients had cognitive impairment, 33% had abnormal score in anxiety scale and 34% had abnormal score in depression scale. There were no statistically significant differences in these scores among L1, L2 and L3.

There were a statistically significant difference in duration of disease, KPS and BI scores between L1 and L3. L3 has significantly longer duration of disease and scored low in both BI and KPS when compared to L1.

All primary brain tumours scored significantly low in FACT-Br ‘Physical well-being’ (PWB) and ‘Emotional well-being’ (EWB) and high score in ‘Social well-being’ (SWB) when compared to healthy controls. When scores of each group were individually compared to healthy control L3 showed the lowest score in ‘PWB’, ‘EWB’ and ‘Functional well-being’. In ‘SWB’ L1 and L2 group showed a statistically significant high score when compared to normative data.

QOLIE-31 applied to epilepsy groups showed a statistically significant lower score in L3 when compared to L2 in ‘Cognitive’ and ‘Social functioning’ domain. On multivariate analysis both poor performance status and frequency of seizures were found to be independent risk factors for poor HRQOL when FACT-Br mean scores were compared. Level of seizures was found to be an independent risk factor for poor HRQOL when QOLIE-31 scores were compared between L2 and L3.

Discussion:
Presence of brain tumour could be attributed to cognitive impairment irrespective of the presence of epilepsy in our cohort. High seizure burden is an independent risk factor for poor HRQOL in patients with primary brain tumour. QOLIE-31 is a more sensitive tool than FACT-Br due to presence of seizure related questionnaire.

Congratulations to Nimeshan GEEVASINGA (Neurology) on his latest publications:
- Cortical excitability changes distinguish the motor neuron disease phenotypes from hereditary spastic paraplegia.

Abstract
Background & Purpose:
Cortical hyperexcitability has been identified as an important pathogenic mechanism in motor neuron disease (MND). The issue as to whether cortical hyperexcitability is a common process across the MND phenotypes, including amyotrophic lateral sclerosis (ALS) and primary lateral sclerosis (PLS), remains unresolved. Separately, the clinical distinction between PLS and ‘mimic disorders’ such as hereditary spastic paraparesis (HSP) may be difficult, potentially delaying diagnosis. Consequently, the aim of the present study was to determine the nature and spectrum of cortical excitability changes across the MND phenotypes, and to determine whether the presence of cortical dysfunction distinguishes PLS from HSP.

Methods:
Cortical excitability studies were undertaken on a cohort of 14 PLS, 82 ALS and 13 HSP patients with mutations in the spastin gene.

Results:
Cortical hyperexcitability, as heralded by reduction of short interval intracortical inhibition (PLS 0.26%, -3.8% to 1.4%; ALS -0.15%, -3.6% to 7.0%; P < 0.01) and cortical silent period duration (CSPPLS 172.2 ± 5.4 ms; CSPALS 178.1 ± 5.1 ms; P < 0.001), along with an increase in intracortical facilitation was evident in ALS and PLS phenotypes, although
appeared more frequently in ALS. Inexcitability of the motor cortex was more frequent in PLS (PLS 71%, ALS 24%, P < 0.0001). Cortical excitability was preserved in HSP.

**Conclusions:**
Cortical dysfunction appears to be an intrinsic process across the MND phenotypes, with cortical inexcitability predominating in PLS and cortical hyperexcitability predominating in ALS. Importantly, cortical excitability was preserved in HSP, thereby suggesting that the presence of cortical dysfunction could help differentiate PLS from HSP in a clinical setting.


  **Abstract**
  While task-dependent changes in motor cortical outputs have been previously reported, the issue of whether such changes are specific for complex hand tasks remains unresolved. The aim of the present study was to determine whether cortical inhibitory tone and cortical output were greater during precision grip and power grip. Motor cortex excitability was undertaken by using the transcranial magnetic stimulation threshold tracking technique in 15 healthy subjects. The motor-evoked potential (MEP) responses were recorded over the abductor pollicis brevis (APB), with the hand in the following positions: (1) rest, (2) precision grip and (3) power grip. The MEP amplitude (MEP amplitude REST 23.6 ± 3.3%; MEP amplitude PRECISION GRIP 35.2 ± 5.6%; MEP amplitude POWER GRIP 19.6 ± 3.4%, F = 2.4, P < 0.001) and stimulus-response gradient (SLOPEREST 0.06 ± 0.01; SLOPEPRECISION GRIP 0.15 ± 0.04; SLOPE POWER GRIP 0.07 ± 0.01, P < 0.05) were significantly increased during precision grip. Short interval intracortical inhibition (SICI) was significantly reduced during the precision grip (SICI REST 15.0 ± 2.3%; SICI PRECISION GRIP 9.7 ± 1.5%, SICI POWER GRIP 15.9 ± 2.7%, F = 2.6, P < 0.05). The present study suggests that changes in motor cortex excitability are specific for precision grip, with functional coupling of descending corticospinal pathways controlling thumb and finger movements potentially forming the basis of these cortical changes.


  **Abstract**
  Importance: Abnormalities of axonal excitability characterized by upregulation of persistent sodium (Na+) conductances and reduced potassium (K+) currents have been reported in sporadic amyotrophic lateral sclerosis (SALS) phenotypes and linked to the development of clinical features such as fasciculations and neurodegeneration.

  **Objective:**
  To investigate whether abnormalities of axonal ion channel function, particularly upregulation of persistent Na+ conductances and reduced K+ currents, form the pathophysiological basis of chromosome 9 open reading frame 72 (c9orf72) familial amyotrophic lateral sclerosis (FALS).

  **Design, setting, and participants:**
  This was a prospective study. Clinical and functional assessment, along with motor-nerve excitability studies, were undertaken in 10 clinically affected patients with c9orf72 FALS, 9 asymptomatic c9orf72 mutation carriers, and 21 patients with SALS from 3 hospitals and 2 outpatient clinics.

  **Main outcomes and measures:**
  Axonal excitability variables were measured in patients with c9orf72 ALS and results compared with
matched patients with SALS and healthy control participants.

**Results:**
Strength-duration time constant (ôSD) was significantly increased in the patients with c9orf72 FALS and those with SALS (mean [SD], c9orf72 FALS: 0.50 [0.02] milliseconds; SALS: 0.52 [0.02] milliseconds; \( P < .01 \) when compared with control participants (mean [SD], 0.44 [0.01] milliseconds). In contrast, there were no significant changes of ôSD in asymptomatic c9orf72 mutation carriers (\( P = .42 \)). An accompanying increase in depolarizing threshold electrotonus at 90 to 100 milliseconds (TEd 90-100 milliseconds) was also evident in the c9orf72 FALS (\( P < .05 \)) and SALS (\( P < .01 \)) cohorts.

Mathematical modeling suggested that an increase in persistent Na+ conductances, along with reduced K+ currents, best explained the changes in axonal excitability. Importantly, these abnormalities in axonal excitability correlated with the motor amplitude (ôSD: \( R = -0.38, P < .05 \) and TEd 90-100 milliseconds: \( R = -0.44, P < .01 \), muscle weakness (TEd 90-100 milliseconds: \( R = -0.32, P < .05 \)), and the ALS Functional Rating Scale (TEd 90-100 milliseconds: \( R = -0.34, P < .05 \)).

**Conclusions and relevance:**
Findings from the present study establish that upregulation of persistent Na+ conductances and reduced K+ currents were evident in both c9orf72 FALS and SALS cohorts, and these changes in axonal excitability were associated with motor neuron degeneration.

**Abstract:**
Genomic regions represent features such as gene annotations, transcription factor binding sites and epigenetic modifications. Performing various genomic operations such as identifying overlapping/non-overlapping regions or nearest gene annotations are common research needs. The data can be saved in a database system for easy management, however, there is no comprehensive database built-in algorithm at present to identify overlapping regions. Therefore I have developed a region-mapping (RegMap) SQL-based algorithm to perform genomic operations and have benchmarked the performance of different databases. Benchmarking identified that PostgreSQL extracts overlapping regions much faster than MySQL. Insertion and data uploads in PostgreSQL were also better, although general searching capability of both databases was almost equivalent. In addition, using the algorithm pair-wise, overlaps of >1000 datasets of transcription factor binding sites and histone marks, collected from previous publications, were reported and it was found that HNF4G significantly co-locates with cohesin subunit STAG1 (SA1).

Congratulations to Farzan BAHIN (Endoscopy/Storr Liver Centre) for recently being a co-author for an Australian Guideline:

**Other News**
Congratulations to third year PhD student, Cecilia Li (CIDM), who is one of only 18 people around the world to be accepted into a very selective Molecular Mycology Course at the Marine Biological Laboratory in Woods Hole, near Boston in the US.
Invasive fungal infections are major causes of morbidity and mortality among people with a compromised immune system. In addition, high costs of treating an invasive fungal infection combined with growing drug resistance means that it’s becoming increasingly important to design new strategies for treatment and prevention.

The Molecular Mycology Course (Current Approaches to Fungal Pathogenesis) that I have been selected to participate in focuses on three of the most common fungal pathogens responsible for causing these invasive infections. These medically important pathogens are *Candida*, *Aspergillus*, and *Cryptococcus* – the latter being the pathogen my PhD research is based on.

The course will train students in a wide range of molecular techniques which are being used to research fungal disease and also provide hands on experience with current models used to study host-pathogen interactions. I am especially looking forward to learning about and working with new systems being used to study interactions between the human immune system and *Cryptococcus neoformans*, as this will help and direct me with a part of my research project.

I am delighted and feel extremely fortunate be have been selected to participate in this course. I am excited about meeting, networking and learning from my fellow mycology students and also internationally recognised experts in fungal pathogenesis.

I would like to thank my supervisors Dr Julie Djordjevic, Professor Tania Sorrell and Dr Sophie Lev for encouraging me to apply for this course. Special thanks to Julie and Tania for writing letters of support and helping me with my application statements.

Congratulations to **Farzan BAHIN** (Storr Liver Centre/Endoscopy) and his wife, on the birth of their daughter, Hawa, on 27 February 2015; 3.6kg; healthy with happy parents.

Congratulations to **Katie EAGER (HOR)** of CTRR who married her partner of 6 years, Brendan, on 29 November 2014 at the Australian Museum. Their science themed wedding included dinosaurs, test tube toasts, a DNA wedding cake, a periodic table seating plan and flowers in laboratory glassware! Their bombonniere were in little Erlenmeyer flasks filled with nerds.