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<http://auaps.org.au>

## Student Profile - Ann Harasta (UNSW)



### What is your research background – how did you get interested in Physiology?

My interest in the field started when I returned from a student exchange year in Cardiff, Wales to my home University in Mainz, Germany. At that time I attended a seminar on physiological chemistry and after a few fascinating lectures I got hooked. I then took the opportunity to perform my undergraduate research project in the group of my current supervisor, A/Prof. Matthias Klugmann in Germany at the Institute of Physiological Chemistry of the Johannes Gutenberg-University of Mainz. After having gained more experience as a research assistant in the laboratory of Prof.

Beat Lutz (Mainz University Medical Centre) I was committed to extend my post-graduate training in an excellent overseas lab. Therefore I was thrilled to start my PhD. with Matthias under the co-supervision of Prof. Gary Housley in the Translational Neuroscience Facility and Department of Physiology at the University of NSW.

### What are your current research interests?

During my PhD research, I am focusing on the Glucagon-like Peptide 1 Receptor (GLP-1R) and the downstream signalling of this G<sub>s</sub>- coupled receptor in the brain. The receptor is highly enriched in the Lateral Septum, a brain region critically involved in the contextual reinstatement of drug-seeking. My preliminary results show that pharmacological or genetic stimulation of septal GLP-1Rs modulate the behavioral effects of drugs of abuse in animal models. In my final year I will address the molecular mechanisms leading to neuroplasticity after GLP-1R activation of septal neurons. The interesting yet challenging project entails cutting edge techniques in pharmacogenetics, behavioural neuroscience, and electrophysiology. I therefore appreciate the fantastic opportunity to attend the Australian Course in Advanced Neuroscience (ACAN) training in April this year to be hosted by Prof. John Bekkers, which will set me up to successfully tackle the final part of my PhD.

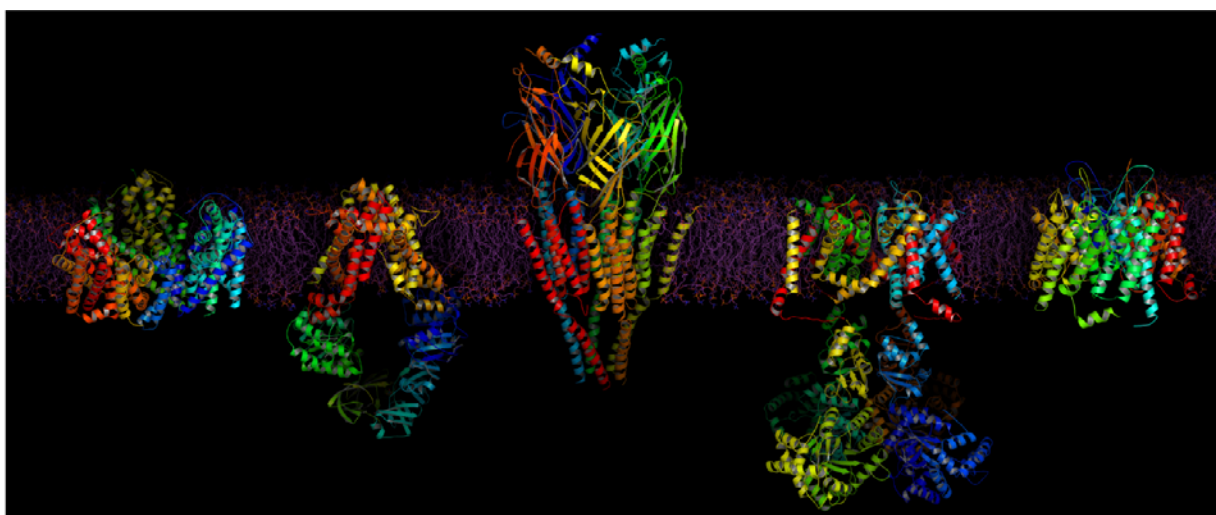
### **What do you do to relax?**

As this is my final year as a PhD. student it is very hard to relax and not to think about my project. However, I try to squeeze in as much exercise as possible. Fortunately, the UNSW Gym is close to the lab and living in Sydney's Eastern suburbs means that the beach is never far away! On top of that I really enjoy baking and this is the time I totally forget the world around me. Also, I feel privileged to have wonderful friends in Sydney and I enjoy meeting them for dinner. Talking to my parents and friends back home via Skype helps me a lot to forget about the miles that separate us.

### **What is the research direction you would like to take in the next 3-5 years?**

When I started my PhD almost 3 years ago, I was sure that I would go back to Germany as soon as I would finish. In the second year that changed to going back to Europe and now I am open to all possibilities. I love the research we are doing in my lab and especially the challenge to combine many skills ranging from molecular work to behavioral studies. What really drives my research is the strong translational potential. I hope that I my preclinical work might contribute to identify treatments for mental disorders such as addiction.

**Ann was awarded the Wiley Blackwell student oral presentation prize at the AuPS 2012 Scientific Meeting in Sydney.**



## **The Gage Conference on Ion Channels and Transporters**

Canberra Boys Grammar School, ACT  
17-19th April 2013

**This is a biennial meeting, continuing the earlier series of Curtin Conferences organised by Peter Gage and encompasses all aspects of the biology of ion channels and transporters - including molecular mechanisms, regulation, physiology, neurophysiology, pharmacology and pathology.**

**Registration and abstracts due by March 25th**

Organising Committee

**Brett Cromer, Angela Dulhunty, Stefan Broer, Andrea Yool, Mary Chebib, Pankaj Sah, Glenn King & David Adams**

For further information contact: [brett.cromer@rmit.edu.au](mailto:brett.cromer@rmit.edu.au)  
<http://www.gageconf.org.au/ions2013/>



## **2013 Australian Physiological Society Meeting 8-11 December 2013.**

**Deakin University Waterfront Campus, in Geelong, Victoria.  
Contact: Stuart A Warmington, head of local organising committee:  
[stuart.warmington@deakin.edu.au](mailto:stuart.warmington@deakin.edu.au).**

### **14 Symposia (provisional list):**

- Aquaporin channels in the nervous system as therapeutic targets
- Cardiac injury and stress
- Dietary protein in health and disease
- Epithelial membrane transport
- Gastrointestinal Function and Metabolism
- High intensity intermittent exercise and training
- Intricacies of type 2 diabetes
- Molecular control of skeletal muscle health in exercise and disease
- Molecular physiology of inherited heart diseases
- Neuro control: Exercise and disease
- Of mice and men: translating biological signals into functional regulation
- Physiological roles of noncoding RNA in muscle
- Releasing pattern of pituitary hormones
- Sarcoplasmic reticulum proteins in myopathy

**Breaking news about this exciting meeting is available at  
<http://aups.org.au/Meetings/201312/>**

## Member Profile - Dr. Heshan Peiris (Flinders University)



### **What is your research background – how did you get interested in Physiology?**

I joined Associate Professor Damien Keating's laboratory in the Department of Human Physiology at Flinders University as a Master's student for a one year research project. I thoroughly enjoyed that year which provided me a unique insight to life as a researcher and decided to do a PhD in the same laboratory. I have always appreciated the role that physiology research plays in understanding the human body in healthy and disease states and its ability to understand and cure complex disorders.

### **What are your current research interests?**

My current research focuses on the mechanisms leading to pancreatic  $\beta$ -cell dysfunction during the pathogenesis of type 2 diabetes. It is well known that prolonged hyperglycaemia can have detrimental effects on  $\beta$ -cell function, however the mechanisms preceding it remain unknown. Using animal models we have recently identified a glucose responsive gene (RCAN1) capable of regulating  $\beta$ -cell function.

### **What do you do to relax?**

I play cricket for the Flinders University Cricket Club. When I am not playing cricket I enjoy going for a swim and watching movies.

### **What is the research direction you would like to take in the next 3-5 years?**

I hope to continue my research in my current field of interest, with a long-term view to becoming an independent researcher in the field of  $\beta$ -cell physiology. I would particularly like to focus on expanding our current understanding of the role of RCAN1 in  $\beta$ -cell function. I would like to continue working on animal models and begin to make use of modern molecular biology techniques to shed light on mechanisms leading to  $\beta$ -cell dysfunction in type 2 diabetes.

### **What was your award winning publication?**

The publication entitled "Increased expression of the glucose-responsive gene, RCAN1, causes hypoinsulinemia,  $\beta$ -cell dysfunction, and diabetes" predominantly contained work carried out during my PhD. This work was based on my initial finding that RCAN1 expression is up-regulated in pancreatic islets exposed to hyperglycaemia. RCAN1 transgenic mice with an over-expression of RCAN1 were used for the rest of this study. We discovered that the overexpression of RCAN1 resulted in the development of age dependent hyperglycaemia due to diminished insulin secretion, altered gene expression, altered islet morphology and mitochondrial dysfunction. These findings shed light on a previously unknown mechanism leading to  $\beta$ -cell dysfunction during hyperglycaemia.

**Heshan was awarded the SDR student publication presentation prize at the AuPS 2012 Scientific Meeting in Sydney. The prize is for best original paper published by an AuPS member during the course of their PhD studies.**

**The abstract for Heshan's publication at the journals website:**

<http://endo.endojournals.org/content/153/11/5212.long>

## Member Profile - Dr. Stefan Gehrig (University of Melbourne)



### What is your research background – how did you get interested in Physiology?

My research has always been focused on skeletal muscle and skeletal muscle disorders, in which I developed a strong interest during 3rd year physiology lectures from my subsequent mentor, Prof. Gordon Lynch. Prof. Lynch's passion for research into the muscle diseases really inspired me early on and convinced me to pursue honours and eventually further study in the Basic and Clinical Myology Laboratory, Department of Physiology at The University of Melbourne. My particular research focus is on investigating novel strategies for the treatment of Duchenne muscular dystrophy (DMD), the most severe form of muscular dystrophy and one of the most common childhood lethal genetic conditions worldwide.

### What was your award winning publication?

Our research over the last 5 years came to fruition early last year with our demonstration that the molecular chaperone protein Hsp72 preserves muscle function and slows the progression of muscular dystrophy, which was published in *Nature* (see link to the article below). We hope that this breakthrough will be trialled in the clinic in the near future and show therapeutic potential in reducing loss of functional muscle tissue, improving quality of life, and extending the lifespan in DMD patients.

**Stefan was awarded the SDR publication presentation prize at the AuPS 2012 Scientific Meeting in Sydney. The prize is for best original paper published by an AuPS member during their first 4 postdoctoral years.**

The abstract for Stefan's publication is available at *Nature's* website:

<http://www.nature.com/nature/journal/v484/n7394/full/nature10980.html>

## 37th Congress of the International Union of Physiological Sciences



**I | U | P | S | 2013**  
**21–26 July 2013 Birmingham, UK**

<http://www.iups2013.org/>

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# ASB 2013

## The 37th Annual Conference of the Australian Society for Biophysics

Sunday 24 to Wednesday 27 November at the RMIT City campus, Melbourne.

**Abstracts and Early Bird Registration: 23 August 2013.**

- For more information contact Gary Bryant, chair, [gary.bryant@rmit.edu.au](mailto:gary.bryant@rmit.edu.au)
- Or visit <http://www.biophysics.org.au/Meetings/2013/index.html>



## Australian Museum Eureka Prizes *Rewarding science*

Presented annually by the Australian Museum, the Australian Museum Eureka Prizes reward excellence in the fields of research & innovation, leadership & commercialisation, school science and science journalism & communication.

**Entries close May 3 at 5:00pm**

<http://eureka.australianmuseum.net.au/>



# 9th Molecular Biology of Hearing and Deafness Conference

June 22-25, 2013

[mbhd2013.stanford.edu](http://mbhd2013.stanford.edu)

Stanford University Campus

- Early Registration: January 9, 2013
- Abstract Deadline: April 17, 2013
- Travel stipends for students and postdocs available. Visit website.
- Questions? Send email to:  
[mbhd-2013@stanford.edu](mailto:mbhd-2013@stanford.edu)

<http://mbhd2013.stanford.edu/>

## AuPS Supporters



This issue of AuPS News was compiled by Glenn Wadley and with many thanks to the generous contributors.

The next issue of AuPS News will be distributed to members in June 2013.  
All contributions for AuPS News should be sent to: [newsletter@ups.org.au](mailto:newsletter@ups.org.au) before the end of May.