# ASCEPT – IUPHAR2006 Travel Grant Report


## *Emma T. van der Westhuizen*

PO Box 13E, Dept. Pharmacology, Monash University, CLAYTON 3800


Thanks to the generosity of ASCEPT I travelled to Beijing, China to attend the 15th World Congress of Pharmacology (IUPHAR2006) conference. This conference was extremely interesting covering a broad spectrum of pharmacology. The array of subject matter varied from day to day, and there was always a session that I wished to attend. I gained a more in-depth understanding of recent advances in pharmacology in many areas outside of the context of my PhD project. I also presented a poster and received some useful feedback on the results presented and suggestions of further experiments to do in order to complete some of my studies.

By attending IUPHAR2006 I learned a great deal about the signalling pathways that cells can activate and a number of other key players in the switching on and off of receptors that I would not have considered previously as being particularly important. Particularly interesting were the presentations by Yashuhito Shirai on the spatial and temporal controls of PKC isoforms, and by Youyi Zhang on IL-6 and how it mediates $\beta_2$-AR induced STAT3 activation, and the signalling pathway that it uses to do this. By listening to the presentations of a number of key researchers in the wider pharmacology field I have learned a great deal and have been inspired to try some new things in my own research.

Harmut Michel's presentation on moving towards high resolution structures of GPCR's was a great introduction to the session on GPCR research, and highlighted future experimental possibilities. The frontiers in GPCR research session covered many interesting aspects of GPCRs. The evolution of GPCRs was presented by Torsten Schöneberg, showing what can be achieved from computer alignments and studying DNA of GPCRs. Graeme Milligan spoke about the structure and function of many classes of GPCRs showcasing many novel techniques for attaining the data. Johnathan Javich's presentation on the changes in the transmembrane homodimers interface that determine the activation of GPCRs was also a highlight. Michel Bouvier's lecture on the modular assembly of GPCR signalosomes was enlightening, and inspiring. The methods that his lab uses to determine the interactions between cellular proteins are extremely clever and determining the temporal aspect of the intereactions between these signalling proteins and GPCRs is of great importance in our developing models of GPCR signalling.

I found the sessions on nuclear hormone receptors and particularly interesting, as these are a receptor group that interact with both ligands and DNA. It was interesting to learn about the recent research on the Oestrogen receptor, presented by Jan-Åke Gustafsson, as this was an area that I used to research. However, I found the seminar on the orphan nuclear hormone receptors intriguing, with the suggestion that these receptors are truly orphans with no actual ligand. These lectures introduced me to an area that I would potentially like to start researching.

There was a strong presence of people researching receptor signalling pathways throughout all the sessions. The 14-3-3 binding protein and the pathways that it activates presented by Haian Fu was an interesting introduction to on of the many other lesser studied signalling pathways (ie. Not cAMP, calcium or ERK). It was also an easy introduction into the world of the stress activated proteins such as ASK1, JNK/p38 MAPK and into Rho kinase signalling.

I met Prof. Stephen Hill (University of Nottingham,UK) and we spoke about the research that is conducted in his lab at the moment, and the potential for post-doc studies with his group. I also was inspired by the nuclear hormone receptor representatives, such as Vincent Laudet, and wish to investigate his recent research interests as a leader in the nuclear hormone receptor field.

By far the overall highlight of the conference was to listen to Terry Kenakin speak about pharmacology….. I got to see the man who wrote our text book.

IUPHAR2006 has provided me with a myriad of information that will be useful for continuing the current experiments as well as for future experiments I will conduct as a part of my PhD thesis. I have had a lot of interaction with prominent people in GPCR research and in cell signalling, and I have been inspired by listening to them speak. I have so many new ideas for my work and have received a lot of useful feedback from people on the work that I have been doing so far. Without the funding from ASCEPT this trip would not have been possible, so thank-you once again.