JAMES RENNIE BEQUEST

REPORT ON CONFERENCE

Conference Title: 15th International Society of Developmental Biologists (ISDB) Congress
Travel Dates: 3-7 September 2005
Location: Sydney Convention & Exhibition Centre, Australia
Group Member(s): Christine Zimmermann (PhD Student, Early Embryology Laboratory, ISCR)
Aims: Attending this conference has helped to expand my understanding of recent achievements and progress in many aspects of developmental biology, as well as give me the opportunity to present my work in the form of a poster.

OUTCOME (not less than 300 words):-

The James Rennie Bequest assisted me to attend the 15th ISDB congress in Sydney, early September 2005. All aspects of developmental biology were covered by the range of participants including patterning, organogenesis, morphogenesis, polarity, cellular and embryonic asymmetries, cell adhesion and migration, neural networks, germ cells, stem cells and regeneration, signal transduction, genomics and imaging. Hundreds of participants contributed to the 14 Plenary Lectures, approximately 100 lectures in three concurrent sessions and over 300 posters over four full days of intense Developmental Biology in a glorious Australian surrounding.

At the time of the conference I was approaching the end of my first year. The conference was critical for me to be able to focus my ideas, analyse my results to-date and compile them into a presentable manner. My PhD is focussed on characterising the function of a gene called "Sox 4" in early embryonic development. Particularly, it appears to have some role in heart development. On my poster, I was able to present expression data as well as initial phenotypic descriptions rendered by our mutation to this gene. Very few people approached me during the poster session, however I feel that I got more use out of discussing my work when I had approached other people at their own posters.

All of the lectures assisted to further my knowledge of developmental biology and for this, I am very grateful to have been able to attend the Conference. Disappointingly, there was quite a number of "last minute changes" (including the cancellation of one of the plenary lectures by a Nobel Laureate). Some of the speakers also presented rather poorly making lectures more difficult to follow. And as the conference was so broad, not many of the talks could be related directly to my work – which is good in some respects as the competition for the ideas I am following is minimal. Nevertheless, more than several posters displayed ideas, techniques and results that I am able to incorporate into my own work.

Of the lectures which helped me to understand further my field, a talk by Prof. Eric Olsen (with whom I have since been in correspondence) stands out for me to mention here. He spoke of the "Epigenetic control of cardiovascular development". Work in his laboratory addresses the question of "How does the heart remodel after pathological disturbance?" Genetically, there is reactivation of a number of foetal genes - previously active during development. This causes further problems and often heart failure as it is essential that adult genes be activated. They are looking for the genetic switch between the foetal and adult signalling pathways responsible for cardiac remodelling.

Also relevant to my field was a lecture given by Dr. Deepak Srivastava. His work centres on a cardiac gene "SRF". Recent work in his laboratory has shown that SRF regulates a microRNA to

regulate downstream gene expression, including that of the cardiac specific factor Hand 2. This is a novel (although not the only example of a) means for regulating gene expression, as traditionally proteins factors act via other protein intermediates to regulate transcription.

Perhaps the most interesting talk was that delivered by Prof. Gail Martin. Her laboratory had published a paper on "The genetic analysis of Sprouty gene function in the developing mouse embryo". This work showed the potency of FGF signalling during inner ear development. They included a number of beautiful experiments showing that altering the levels of FGF signalling by abolishing Sprouty 2 gene function changes the fate of cells in the Organ of Corti after birth. A single additional structural cell is created, with this alone altering the mechanical property of the membrane preventing signal amplification and thus deafness.

Days were very full and there were constant waves of people moving upstairs-downstairs/in-out of the allocated seminar rooms, yet it was still possible to approach key people directly at 'break' times. I was able to have good discussions with a scientist and her final year PhD student about their work on a transcription factor, which has an expression pattern similar to my gene of interest Sox 4. When my work progresses a little further we will be able to use our discussions in Sydney to facilitate further correspondence and perhaps even collaboration. Professor Peter Koopman was approachable and spoke very encouragingly about my work. He has a wealth of knowledge about Sox proteins and 'what is happening where' as to who in laboratories is researching them.

I am now in my second year and am very much focussed on following up some ideas which arose from my attendance at ISDB. I very much appreciate the contribution by the James Rennie Bequest to assist with my travel to Australia.