

## **Report for the NIH Office of Rare Diseases Research (ORDR)**

19<sup>th</sup> May, 2010

Chair: Paul Trainor

Dates: 11-16<sup>th</sup>, 2010

Venue. Il Ciocco Hotel and Resort  
Barga, Italy

The 2010 Craniofacial Morphogenesis and Tissue Regeneration Gordon Research Conference was a resounding success. The meeting catered to approximately 170 participants and in distinct sessions covered the following topics: (i) Neural Crest: Formation, Migration, Differentiation; (ii) Placodes: Formation and Differentiation; (iii) Evolution, Development and Patterning; (iv) Tissue Interactions and Morphogenesis; (v) Signaling and Cell Communication; (vi) Craniofacial Disorders and Syndromes I; (vii) Craniofacial Disorders and Syndromes II; (viii) Stem Cells and Tissue Engineering; (ix) Keynotes.

The meeting caters to a number of diverse and competing interests within the craniofacial field however in my opinion, the two Craniofacial Disorders and Syndromes sessions were a highlight as this was the first time that many rare craniofacial malformation conditions were discussed in the framework of the Craniofacial Gordon Conference. These included Mowat-Wilson, Neuro-cardio-facial cutaneous, Frank-Ter Haar, Pierre-Robin and Treacher Collins syndromes in addition to the more common, cleft lip and palate, craniosynostosis, ciliopathies and open neural tube defects. The overwhelming response from the completed conference surveys was that the quality of the science was extremely high, the atmosphere very interactive and that there were plenty of opportunities for scientists at all career levels to discuss their work in an open and friendly format.

As part of the conference, a panel discussion was held on Wednesday evening April 14<sup>th</sup> to debate translating basic research into clinical practice. The panel consisted of 8 distinguished clinicians, basic scientists and tissue bioengineers who engaged the audience with ideas as to how to facilitate bringing together the different fields of craniofacial biology and how to translate the incredible advances in basic biology into clinically relevant therapies. Translation doesn't simply mean developing new materials for the clinic or new stem cell approaches to enhance surgery prognoses and tissue repair. Rather, our understanding of specific rare syndromes such as Treacher Collins and Waardenburg, as well as cleft palate have reached the level of sophistication that basic biologists are defining molecular means by which we can intervene in utero in mouse models to prevent the pathogenesis of craniofacial malformation syndromes. Thus translation now encompasses prevention as well as repair.

The Craniofacial Morphogenesis and Tissue Regeneration Gordon Research Conference is a biannual conference which will duly be held again in 2012. However, the overriding theme of the conference which encompassed basic and clinical biology together with stem cell and tissue engineering will now be a feature of additional future conferences. For example, in April 2011, the AAA/FASEB will host its annual meeting in Washington and I will be Chairing a "mini-meeting" on neural crest and placodes. This mini-meeting will consist of 5 sessions ranging from the basic anatomy of these distinct structures and their tissue interactions to disease and repair. The theme is a direct outcome of the success of the 2010 Craniofacial Gordon Conference.