

Report of the ISSCR 2025 Annual Meeting in Hong Kong, June 11th – 14th

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This year's ISSCR Annual Meeting was held at the Hong Kong Convention and Exhibition Centre. With a huge exhibition area and a location on the waterfront, it was a very impressive venue. Within it, over 4,000 scientists from around the globe gathered for a four-day program showcasing the latest breakthroughs in stem cell research.

Despite the large number of talks and parallel sessions, the event was very well organized, making it easy to navigate the schedule and attend the sessions most relevant to my work. Something to highlight would be the accompanying app that came with the program, which made navigating the large volume of talks and posters very easy. Also, the program was divided into distinct thematic tracks, such as "Pluripotency and Development" and "Organ Generation and Regeneration." Given my focus on early human development and the use of organoid models to further understand such a topic, I spent most of my time attending the "Pluripotency and Development" sessions.

I thoroughly enjoyed seeing the progress the field has achieved in furthering complex organoid and gastruloid models to study different areas of development — mainly because it aligns with my own work, but also due to the scientific community's growing capability to model and understand previously inaccessible stages of human development. One of the most interesting talks I attended was within the "Fate Choices in Development and Regeneration" session, where Jacob Hanna from the Weizmann Institute in Israel gave a talk about his lab's progress in modelling human development and creating sophisticated incubation systems that allow for ex utero development of mice, with work in that area allowing them to take understanding from mice and apply it to humans.

In the same session, an exciting talk was given by Tianming Wu from the Chinese University of Hong Kong, describing their advanced trunk-like organoid model. This model captured key cell types involved in dorsal-ventral and anterior-posterior patterning in humans by co-culturing neuromesodermal and notochordal progenitors. The result was a neural tube-forming structure with defined anterior-posterior axis that, following the addition of cytokines, developed a dorsal-ventral axis, neural tube progression, and somite formation.

Combined, these talks gave me some great ideas on how to analyse and potentially increase the complexity of the human heart-forming organoid I am currently working on. Most interestingly, however, this session also sparked a debate in our lab group about the ethical considerations surrounding how far we should go in modelling human development, and where scientists should draw the line.

As well as giving me great ideas for my own research, I also attended some very exciting talks on new methodologies that inspired me to connect with the presenters to discuss potential collaboration and use of their newly developed technologies. For example, Alex Gould from the Francis Crick Institute gave a presentation on a technique for tracing metabolites through cells by adding a synthetic non-degradable R group to amino acids that can be easily identified in mass spectrometry, and then using microdissection to perform mass spec metabolomics in a spatially contextualized manner.

Beyond the formal sessions, I found the exhibition hall highly informative and well laid out. It created a relaxed environment to socialize and connect with fellow researchers. It was valuable to engage directly with companies, learn about their latest products, and explore ongoing developments in the field. The poster sessions were another highlight, with over 1,000 posters presented. I appreciated the opportunity to discuss my own work with colleagues, connect with

researchers whose publications I've studied, and receive direct feedback. Furthermore, networking events like the "WunderBar event" hosted by the GSCN were particular highlights, adding a fun and relaxed atmosphere to the experience and enabling both new connections and reunions with friends I'd made at previous GSCN networking events.

Overall, travelling to the ISCCR 2025 was one of the highlights of my PhD so far. With amazing science, great networking, and extremely exciting technologies and ideas being brought to my attention, I valued the experience immensely. I would highly recommend attending to anyone in the stem cell field, and I am extremely grateful for the financial support awarded to me by the GSCN to make this trip possible.

**Sincerely,
Liam Wilson**