

Report of the 2019 Annual Meeting of the ISSCR in Los Angeles, USA (26th to 29th June)

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This year, the annual meeting of the International Society for Stem Cell Research took place at the Los Angeles Convention Center on four scientifically filled days at the end of June. The meeting featured more than 200 speakers and gathered approximately 4000 attendees from several countries to discuss the advances in stem cell science around the world. As a first time attendee at this meeting, the location itself already left a long-lasting impression: the size of the exhibition and plenary halls was immense and offered space for thousands of scientists to come together to discuss their current work and foster collaborations.

The seven plenary and multiple concurrent sessions covered plenty different topics concerning stem cell research like, stem cell aging, disease modeling, tissue and organ engineering, epigenetic regulation of stem cells, translation of stem cell research into the clinics as well as many more. However, one of the most abundant topics at this year's meeting seemed to be the usage of organoids to model human organs *in vitro*. Already in the first plenary session Karl Koehler gave a very interesting talk about the use of organoids to recapitulate the growth of sensory hair cells of the inner ear or of hair follicles of the epidermis. This presentation was complemented by Hans Clevers talk who gave a nice overview of different organoids which can be produced to mimick the gut, the lung or the liver. Some of his students even managed to produce organoids of snake venom glands and presented their results in one of the concurrent sessions, where they showed that those organoids were indeed able to produce different types of snake venom. This already shows that not only the plenary but also the concurrent scientific sessions offered several very interesting talks. Of those, I especially enjoyed several presentations concerning the translation of stem cell research to the clinics. David Alagpulinsa presented data on human stem cell-derived insulin-producing β cells. His group could show that the encapsulation in alginate microcapsules together with CXCL12 provides long-term survival and functional maintenance of the stem cell-derived β cells without immunosuppression, both in mice and non-human primates. Nicholas Cory showed data on embryonic stem cell-derived inhibitory interneurons. These inhibitory neurons shall be used for the treatment of drug-resistant epilepsies or neuropathic pain. In their rodent models the group was able to show an intergation and maturation of their ESC-derived inhibitory interneurons along with a decrease of seizure frequencies in a rodent epilepsy model as well as a reduction of allodynia in two rodent models of neuropathic pain. The enormous offer of high impact research during both the concurrent and plenary sessions was really stunning and complicated the choice for specific research topics in the parallel sessions.

Except for the excellent scientific presentations there were several further aspects of the ISSCR meeting which for me made this conference truly exceptionell. More than 100 different companies presented their products in the exhibition hall. The exchange with the exhibitors was not only interesting to learn about their latest products but also to get some first hand experience from scientists who switched from academia to industry. To learn about job offers and potential research positions outside of the university was very helpful for young scientists like myself to further develop future career plans. In general, the focus on young scientists was really pronounced at this conference by events like the „Junior Investigator Social Night“ or the „Junior Investigator Career Panel Luncheon“. Those events helped to get in contact with fellow young scientists and to learn about alternative career pathways or to discuss the most

important steps to start your own research group. Kenneth Gibbs, who participated in the „Junior Investigator Career Panel Luncheon“, also gave interesting insights of his work at a governmental funding agency and underlined again the importance of networking. For this, the ISSCR also offered plenty of opportunities: I especially liked the great atmosphere and very constructive interactions with other scientists during the poster sessions. Also, the GSCN featured Meet-up Hub and WunderBar events were fantastic opportunities to get in touch with stem cell scientists from Germany.

Taken together, the visit of the ISSCR annual meeting was a great experience and helped me a lot to get some new ideas for my future career pathways and research interests. I was able to meet and talk to some very interesting fellow stem cell researchers, who gave me very valuable input to my own research ideas. Therefore, I would like to thank the German Stem Cell Network again very much for the great support to participate in this conference.

Sincerely,

Julia Franzen