



3rd Neurogenesis Conference, Implications for Lifelong Development and Disease #Neurogen24

The long-awaited third edition of the Neurogenesis Conference, with a focus on “Lifelong Development and Disease”, finally took place from February 7th to 11th 2024 at the Fiesta Americana Condesa in Cancun, Mexico. Co-organized by Sebastian Jessberger (University of Zurich) and Hongjun Song (University of Pennsylvania), this reunion marked the first neurogenesis conference since the COVID-19 pandemic, with the last event being held back in 2019. This year’s edition was a resounding success, combining exceptional science, dynamic participants and a cheerful, relaxed atmosphere. Attendees were eager to present recent and unpublished data, exchange ideas, as well as debate new and sometimes daring concepts. Particularly unique to this conference was the widespread and genuine joy of the participants to reconnect in-person with friends and collaborators after five years of intermission. Overall, the 2024 Neurogenesis conference was undeniably a fantastic comeback of the Fusion neurogenesis conference series.

Content

The conference centered around neurogenesis, from development to adulthood, and addressed its implications in health and disease. Consequently, a great diversity of topics was explored, encompassing multiple experimental strategies, model organisms and research questions. Yet, the quality of the talks, given by world-leading experts and younger scientists alike, enabled the audience to receive a broad but complementary overview of the exciting and ongoing research, as each talk integrated well within the overarching theme of the meeting.

Despite every presentation being unique and distinct from the rest, there were several recurrent themes throughout the meeting. This highlighted how the same biological question can be addressed by a multitude of ways by various research groups. For example, the regulation of quiescence in neural stem cells (NSC) was a particularly popular topic, with Ryoichiro Kageyama (RIKEN Center for Brain Science) showing the role of gene expression oscillations and Armen Saghatelian (University of Ottawa) displaying the involvement of calcium dynamics in the control of their quiescent state in mice. Additionally, Allison Bond (Icahn School of Medicine at Mount Sinai) shared

her group's work on the establishment of quiescence during mouse development, while Fiona Doetsch (University of Basel) reported on a subpopulation of quiescent NSC that are responsive to pregnancy.

Other fundamental research topics were also very popular, including the role of adult-born granule cells in the hippocampal circuitry and cognition. This topic was particularly well discussed through different perspectives by Rene Hen (Columbia University), Paul Frankland (SickKids Research Institute), Amar Sahay (Massachusetts General Hospital) and Matteo Bergami (University Hospital Cologne).

This meeting also had a notable interest in human diseases, from how to model them in vitro and in mice, to understanding their mechanisms and setting up clinical trials with new therapeutic strategies. These concepts were well reflected in Guo-Li Ming's (University of Pennsylvania) and Ana Martin-Villalba's (German Cancer Research Center) captivating talks on human glioblastomas. Aging was also a major interest at this conference, with Anne Brunet (Stanford University) showing a lipidomic study of brain aging while Tony Wyss-Coray (Stanford University) demonstrated the numerous age-associated changes that occur in the blood of mice and humans.



Photo by Fusion team: Conference attendees

Finally, the conference also highlighted cutting-edge technologies, with several talks showcasing innovative tools that will shape future research in the neurogenesis field.

Memorable presentations included the assembly and recordings of neuronal activity in quadruple organoid assembloids by Sergiu Pasca (Stanford University), and the optimization of 3-photon dual colour in vivo imaging in mice by Yusaku Hontani (University of Zurich).

Attendees

The conference's list of participants was as diverse and exceptional as the science was. With approximately 110 attendees, this meeting was relatively small and intimate. The extent of familiarity and friendship between participants was perhaps best illustrated by the fact that the usually life-saving name tags were almost unnecessary during this meeting. Nonetheless, the participants were highly international, representing multiple institutes and universities from across 4 continents and counting many more nationalities. The spread in career stage was equally broad, with many senior professors attending, but also junior group leaders, postdocs and PhD students. Importantly, the friendly and welcoming atmosphere that defined this conference greatly facilitated interactions across all participants and enabled exceptional networking opportunities. Moreover, the relaxed open-minded ambiance extended beyond the conference room, as conversations could easily start at one of the resort's many restaurants and bars, or even at the beach.

The meeting boasted an impressive line-up of speakers, with the majority being widely recognized and established leaders in their respective fields. The talks were not only inspiring but also sparked lively discussions throughout the conference. Some Q&A sessions were particularly dynamic, resembling ping-pong matches that continued beyond the walls of the seminar room. Controversial and opposing concepts were also proposed, challenging established dogma of the neurogenesis field and energizing the participants. Furthermore, the willingness of many speakers to openly present unpublished data created a collaborative atmosphere, which is essential for keeping the research field active and engaging.



Photo by Fusion team: Conference chairs and poster award winners

Finally, the conference's content was complemented by high-quality and well-presented posters. Counting more than 40 posters, predominantly by PhD students and postdocs, the poster sessions kicked off with one-minute flash-talks by all presenters. This enabled attendees to prioritize their timetables based on their interests. The multiple poster sessions that were held throughout the conference gave attendees ample time for networking, receiving valuable feedback and fostering collaborations. The success of these discussions was highlighted by the five poster prizes awarded at the Gala dinner. Determined by popular vote, the prizes included a 12-month subscription to Cell Stem Cell, an EMBO conference funding contribution and three Fusion "Best Poster" awards.

Overall, this conference was a great success, combining exciting research, enthusiastic participants and a paradisiac location. Indeed, it was a remarkable example demonstrating that work and fun are not always mutually exclusive. I am sure that we are all looking forward to the 4th edition and the pina coladas that come with it.

