Ines Lüchtefeld (ETHZ)

N4M conference on Nanoengineering for Mechanobiology, November 30 - December 3, 2020, online.

Thanks to the financial support of Life Sciences Switzerland (LS2) and the Swiss Academy of Sciences (SCNAT), I could attend the N4M conference on Nanoengineering for Mechanobiology , that took place in a virtual form from the 30th of November to 3rd of December 2020.

I had the chance to contribute with a 20 minute oral presentation on my PhD research with the title “Using Force-Controlled Micropipettes to Investigate the Influence of Cytoskeleton and Membrane Tension on the Single-Cell Mechanosensitive Response”.

It was the second time that I attended the N4M conference that normally takes place in spring in the beautiful Italian coastal town Camogli and is conducted in a highly interactive format focused on the networking of mechanobiologists from all over Europe and also some overseas groups. Unfortunately, due to the special circumstances of this year, the conference was first moved to December and then converted to an virtual format.

Despite of the difficult circumstances, the conference organizers did a great job in facilitating an interactive environment that allowed lots of networking. Instead of following the strict schedule of the planned in-person conference, the virtual format allowed more flexibility and therefore prevented passive, multitasking listeners. All contributed talks and poster presentations were prerecorded and were available online from a few days ahead of the conference until a few weeks after the conference. In this way conference attendees had the chance to watch interesting talks when their normal schedules allowed to, instead of passively listening to online presentations for four days. This flexibility in turn freed up time for interaction: a half an hour time slot was scheduled to discuss with each speaker, where one could freely join and ask questions. This great amount of time allowed for very deep questions and discussions, and thanks to the flexibility, for each talk groups of 5-10 highly interested researchers came together to discuss the presented results and implications in depth. This change in format was a very nice change from the rather superficial discussions at in-person conferences that often need to be cut short in order to follow the schedule.

In the afternoons, great keynote speakers from all over Europe and also Australia gave interesting presentations on topics like new tools for the study of mechanobiology, and the implication of mechanosensitivity in various physiological, pathological and developmental circumstances. Each keynote lecture came with a long and lively discussion by a large fraction of the audience.

For my own talk, I got a lot of great feedback and inputs and got in contact with groups that work on similar topics and are interested to collaborate. Also during the question sessions of other talks and posters, I could gathers lots of new insights and contacts. These contacts are crucial for me.

On one I come from a laboratory that is not focused on mechanobiology, so that the inputs of experts of the field are extremely valuable to me, and collaborations with groups that work with supplementing methods, and that can provide biological knowledge, are crucial for the success of my research.

On the other hand, I am finishing my PhD in the next months. Since I want to continue toward an academic career, meetings like this enable me to meet interesting group leaders, that can become future employees or collaborators.

Alessandro Pedrioli (ETHZ)

PEGS Europe 2020, November 9-12, 2020, online.

The virtual PEGS Europe 2020 was a great opportunity for me to connect with other researchers and attend several talks given by worldwide-renowned experts in their respective field.

Although in a virtual format, due to the current pandemic situation, the organizers have been able to put together an incredible interesting agenda. Personally, I liked the fact of having the possibility to attend multiple parallel talks, as they were recorded and therefore accessible later. Especially during certain sub-sessions, it would have been a shame to have to choose between one talk or another, being both of them really interesting.

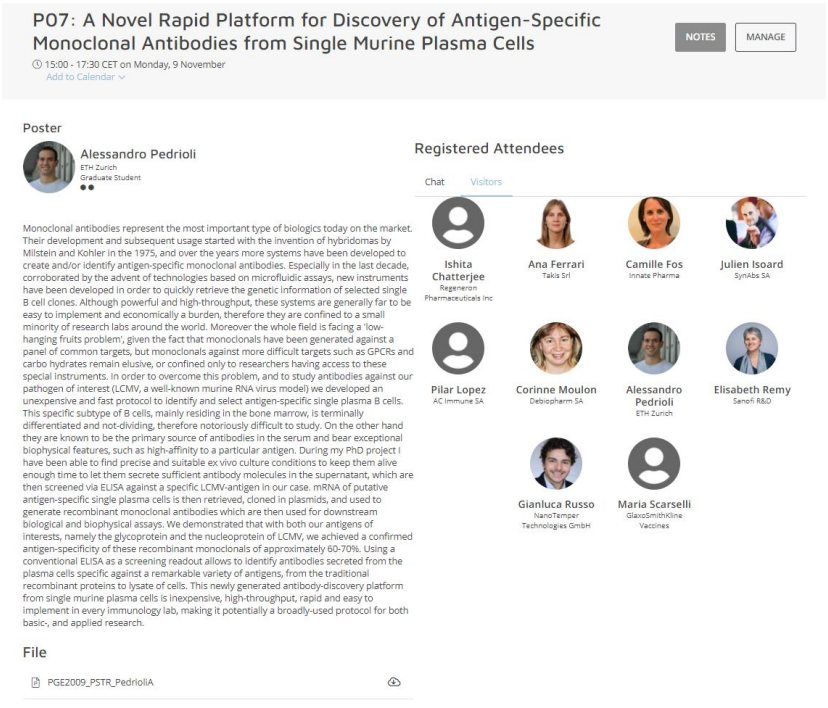
Great relevance was given of course on the discovery of new biologics against the SARS-CoV-2, and most of them were in fact monoclonal antibodies or related reformatted variants. Further, there were a good number of talks/panel sessions/posters regarding different platforms suitable for antibody discovery, which was also my main topic of interest, being part of my PhD project (discovery and characterization of LCMV-specific monoclonal antibodies).

The poster session consisted of a pre-registered powerpoint presentation of 5 minutes, accessible then to the attendees during the whole summit, particularly during Monday (9th November) afternoon, as well as during the following days. I was able to particularly chat with 3 researchers also working in the same field, which were highly interested in our newly developed antibody-discovery technique. That was also a nice occasion to share part of my unpublished protocol to third parties, and they were kind enough to also discuss about their internal procedures or platforms. Thanks to these exchanges, this was surely a win-win situation for all of us.

I have not found the virtual format constraining the scientific interaction so drastically, mainly because of the simplicity of the virtual conference platform. Of course attending a conference in person is quite different, especially from a networking point of view, but this was a good compromise given the circumstances.

Unfortunately I was not able to take any picture of me in front of the poster, therefore I decided to attach a photo of the main poster page instead.

I would like to express my gratitude to the LS2 organization for having given me the opportunity to attend this outstanding conference. I truly believe that the scientific exchange between researchers working in a specific field is one of the most interesting and valuable activity one can do, and this goes beyond the format per se (virtual or in person).



Sophie Sluysmans (University of Geneva)

Cell Bio Virtual 2020 - joint meeting of ASCB and EMBO, December 2-16, 2020, online.

2020 was not the easiest year to take part in a conference, as many of them were postponed or even canceled. Fortunately, the one I wanted to attend, the joint meeting of ASCB and EMBO which was originally planned in Philadelphia (Pennsylvania, USA), moved online. This meeting is of major importance in cell and molecular biology, as it connects thousands of life scientists and gives the opportunity to learn about a wide array of topics in the field. The program of the conference was very dense, planned over eleven days from the 2nd to the 16th December, with the first three days focusing on career development, the second week on scientific sessions and the last three days being dedicated to poster discussions. The conference schedule was organized according to the US East Coast time zone (Eastern Standard Time, EST) and multiple sessions were running in parallel, thus it was not always possible for me to follow the live-streams; however, the advantage of being online was that I could go later on the virtual meeting platform to watch the talks I had interest in, since most of them were recorded and available until mid-January for on demand viewing. Among the talks dedicated to educational and professional development, I was especially interested in two topics. The first was about publishing and networking in sciences; already convinced by the idea of preprints, I was further persuaded of their utility thanks to examples given by the speakers, and how their publication of preprints had important impacts on their research and career (feedbacks, evaluation of grant applications,…). Moreover, I followed a really interesting session on journal-independent peer review: I learned about the platform Review Commons that runs this peer review process of preprints independently of journals, and enjoyed the discussion about the need of transparency in the publication of papers. The second type of talks I listened during this part of the conference was professional development in industry, as I reach the end of my PhD and consider looking for a job in a private company: I attended sessions about different types of scientific careers I consider, noting relevant advices for my transition from academia to industry.

During the second week of the meeting, I followed symposia, minisymposia and keynote lectures mainly related to my current research, e. g. cell-cell interactions, pushing and pulling within and between bells, and mechanobiology, but also opened my mind to new topics. I had thus the opportunity to learn about cutting-edge research in the domain of cell-cell junctions, but also in the burning topic of biomolecular condensates for instance.

Poster discussions happened during the final three days. Prior to the conference, presenters had to upload on the virtual meeting platform their poster, as well as a short video explaining their research and synchronized with zoom-ins of their poster, which attendees could then visit before the live poster discussion sessions. I had the opportunity to present my PhD work in a poster, received valuable feedbacks during the live discussion and met an investigator studying one of my proteins of interest and with whom my current lab will maybe share research resources in the future.

Thus, despite the unconventional circumstances of 2020 and the online form of the conference which deeply changed the experience of participating to a scientific congress, I enjoyed the Cell Bio Virtual 2020, and greatly thank LS2 for its support.

Andreas Bapst (University of Zurich)

Keystone Symposia - Hypoxia: Molecules, Mechanisms and Disease, January 19-23, 2020, in Colorado (USA)

Thanks to the generous LS2 travel grant I was able to attend the largest international conference in my research field, which has been held for the tenth time. The conference took place in January in Keystone, Colorado in the USA, which is a location well suited for the topic of the conference: Located at an altitude of 2800 meters above sea level and ski lifts reaching approximately 3500 meters, the environmental conditions in the small village can certainly be called hypoxic.

The conference was attended by more than 140 participants, with attendees from virtually all well-established and renowned oxygen physiology research groups worldwide, with a good mix of professors, PIs, Postdocs and PhD students. Notably, among the participants were also the freshly awarded laureates of the Nobel Prize for Physiology or Medicine, Peter J. Ratcliffe, William G. Kaelin and Gregg L. Semenza. This created an ideal atmosphere and perfect conditions for learning, feedback, constructive criticism and stimulating discussions.

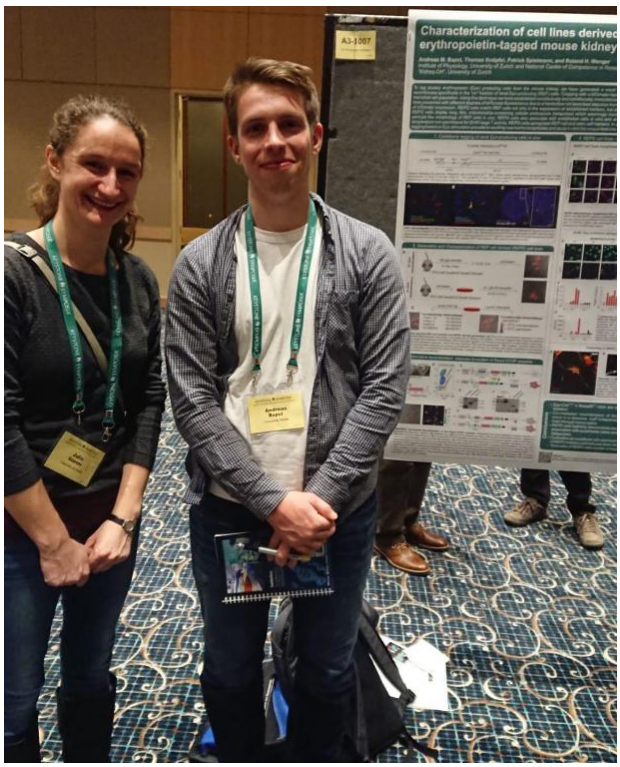
After a quiet welcome on Sunday, including a welcome mixer, the meeting was kicked off by one of the organizers, Prof. José Lopez-Barneó from Madrid. The first session focused on acute oxygen sensing, involving the carotid bodies, the brain, and the lung vasculature. After lunch and a bit of skiing with absolutely perfect weather and snow, the topic was the pathophysiology of hypoxia and ischemia, including a fascinating talks about the naked mole rat and its astonishing resistance to hypoxia. After a nice dinner, it was my turn to present in the three hours long poster session. While I was rather nervous, this has proven to be an excellent opportunity for scientific exchange and networking. At no other meeting have I had as many visitors, questions and recommendations from experts from my field.

On the second day, in a special session, the three 2019 Nobel laureates were honored and we delved into the discovery of how cells sense and react to changes in oxygen availability. This was followed by presentations from two of the laureates, Peter J. Ratcliffe and William G. Kaelin, who focused on the main oxygen sensors and transcriptions factors, the PHDs and HIFs. After again some skiing, the afternoon session was focused on redox signaling and gave fascinating insights into how ROS modulates hypoxic responses.

On day three, with a focus on hypoxia and cancer in the morning, the last of the Nobel laureates presented his current research, which focuses on HIFs in cancer cell immune evasion. While all the talks were very interesting, I frankly had trouble following them, as I had my own short oral presentation in the afternoon. While I was extremely nervous, especially considering the renowned audience I was presenting to, it was an amazing experience and the numerous questions and recommendations from the audience certainly helped me a lot with my future research. Rather relieved I was able to enjoy the evening session, which focused on new trends and techniques in hypoxia research, including industry talks about novel HIF inhibitors.

The fourth and last day of the conference was focused on hypoxia and stem cells in the morning and the presenters discussed how hypoxia signaling is involved in stem cell reprogramming, differentiation, and development. After lunch, my lab mates and I enjoyed our last bit of skiing, this time including a hike to quite hypoxic conditions (~3400 meters above sea level), followed by carving through the woods in fresh powder (or how the locals like to call it: champagne powder). The last session was centered on hypoxia and inflammation and we learnt how hypoxia is able to reprogram and modulate immune cells and how it on one hand can help with pathologies such as colitis, but also be involved in them such as in Alzheimer's disease.

All in all we were really lucky having been a part of this meeting, especially considering the timing right before the global pandemic. It was exciting travelling to the USA and meeting all the big names of our research field, including the three Nobel laureates, joining them for skiing and discussing with them during breakfast or dinner. While I was extremely nervous and frankly also a bit scared beforehand, in hindsight I really appreciate the opportunity of giving a poster and an oral presentation in front of such an audience and it really helped me grow as a scientist and as a person. I would like to thank the LS2 for supporting me with this generous travel grant and for making this experience possible.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Characterization of cell lines derived
erythropoietin-tagged mouse kidney

Julia Günter, University of Zurich

Keystone Symposia - Hypoxia: Molecules, Mechanisms and Disease, January 19-23, 2020, in Colorado (USA)

I was awarded with the LS^2 travel grant for the attendance at the Keystone Symposium on “Hypoxia: Molecules, Mechanisms and Disease” in Keystone, CO, USA from 19th January until 23rd January 2020. This international conference is held every other year and is the most important meeting of the hypoxia research field. The public interest in hypoxia research increased tremendously after the Nobel Prize in Physiology or Medicine was awarded in 2019 to William Kaelin, Peter Ratcliffe and Gregg Semenza "for their discoveries of how cells sense and adapt to oxygen availability". At the conference you could really notice that the Nobel prize further encouraged researches in the field for future projects. The conference was composed of keynote lectures and talks of PIs as well as younger researchers including postdocs and PhD students. It was really interesting to see the latest results of well-established groups, such as the Nobel prize laureates, but it was as exciting to follow the results of newly founded junior groups and excited PhD students. In addition to sessions in the morning and the afternoon, there where workshops on specific topics in the afternoon. The conference was very focused with all most important scientists of the hypoxia research community being present, including all three Nobel prize laureates. There were no parallel sessions which enabled me to follow all presentations and workshops. After dinner, where people could network in a very informal way, there was every evening a long poster session. This was very interesting as there was enough time to talk to many presenters and to get to know many highly interesting projects. In the second poster session, it was my turn to present my poster on “The FIH substrate OTUB1 is a negative regulator of renal fibrosis”. This was an excellent opportunity to get feedback on my PhD project. Although I was quite nervous in the beginning, it turned out that it was really needless as all visitors were extremely friendly and they gave very helpful input and we had some fruitful and interesting discussions. In addition, I felt really honored that I even could present my work to one of the Nobel prize laureates. The new connections to researchers in the field and the valuable input will be definitely of help for my project and my future career. Getting insight into novel research projects also gave me an overview over possible topics to work on during a potential PostDoc. Furthermore, it was really interesting to get into contact with international PhD students to increase my understanding of the necessary work for internationally relevant science. On a personal level, the trip to Keystone was also really revealing, because the base elevation of Keystone is at around 2800 m, which is considered to be high altitude. Working in the hypoxia field, I know the theory about physiological adaptation to high altitude and the involved hypoxia, but it was really fascinating to experience the physiological response to low oxygen pressure including shortness of breath in “normal” activities such as going up the stairs as well as during skiing at even higher altitude and how the human body can adapt. Taken together, I am deeply grateful that the LS^2 supported me with this travel grant to attend this international conference.