

Notes from Keystone

At five in the morning I got buzzed out of bed, flushed down a bun and a coffee, and ventured out in the cold morning breeze heading for the Copenhagen airport and from there, half the way around the Earth to Keystone, Colorado. The night before I had tucked my son in and tried to explain to him that I would be gone for the next week and return on his 2nd birthday. He couldn't relate to it at that point, but after having returned he has at several occasions asked for my assurance that I would not leave him again.

In the airport I met with Gregers Jungersen, my supervisor, and Heidi Mikkelsen, his post-doc. We checked in our luggage and awaited the departure to Denver, Colorado. What happened until then was quite trivial airport-/airplane-stuff (reading, getting kicked in the back by 'cute' little kids, sleeping, eating delicious airplane-food, etc.), beside the pleasant and definitely mentionable surprise that the back of the plane was actually an undercover drinks'n'snack bar free of charge! So we had a little party of three back there drinking G&T, Bloody Mary and beer while repeatedly assuring people that we were not in line for the toilet.

Eventually, we arrived with the shuttle bus from Denver airport to Keystone after having travelled for 22 hours and crossed 8 time zones. We checked in and went directly to the bar to have a mingle and a beer. One beer and I was out.

The following day I was fit as a fiddle at five in the morning. Breakfast at 7 am was sausage patties, which were delightful, potato roast and scrambled eggs, and then the scientific program started at 8 am.

In order to help the reader see it from my perspective, I will just give a very brief outline of what I am doing: I'm doing a PhD and have been doing so for about 1 year and 5 months. I work with pigs, and I work with PRRSV (Porcine Reproductive and Respiratory Syndrome Virus). And I'm going to save the world from this devastating disease by developing a rationally tailored vaccine against PRRSV that will induce a cytotoxic T-cell response upon vaccinating with a few carefully selected MHC class I epitopes that are conserved among strains and promiscuous in terms of MHC allele binding. And that's basically it. The rest is legwork and elbow grease.

So, anyway, the scientific program started at 8 am with an interesting talk by Linda Saif about gut reactions to rotavirus vaccines in piglets and infants. Following this was a 2 hour session about gammadelta T cells, which I found very interesting as these cells are abundant in pigs, and has multiple phenotypes that apparently play a role during PRRSV infection. This is definitely something that I will look further into.

Looking at my notebook it is obvious that throughout the whole symposium there was a great deal of interesting things that were presented and said during conversations that all have a potential of being relevant to my project. General stuff, like what kinds of cells are secreting what cytokines under what conditions affecting what other cells and in what way? Or how many different phenotypes of T cells can you come up with, and what are their hallmark surface proteins and immunological role? Or what is the pathology of this and that infection in this and that animal?

But also more specific things, such as how the metabolism in a pig can be assumed to be in the same stressful state as a runner in the middle of a marathon due to the unfair demands on the circulatory system posed by a body that gains a kilo a week (apparently this condition of constant stress can skew the relationship between T cells favouring the Th2 segment). Or that PRRSV can induce a potent activation of plasmacytoid dendritic cells through TLR7.

So what I really want to focus on here is the coffee breaks. These were of course dispersed evenly throughout the whole program with servings of tea, coffee, cool water and sometimes even lemonade. But, and this is what really astounded me, there were no snacks! Not a single cookie crumb or even a grape. The only non-liquid thing was a slice of lemon for the tea. I mean, this is America, the home of the Whopper where every food ordering is followed by an alluring "Ya want it supersized?" This still puzzles me. However, the breaks posed a perfect opportunity for getting the blood flow up and running, looking at the dashboards presenting the many options for leisure activities,

browsing the brochures laid out for inspiration, and conversing with the other delegates. I chatted with several kind and interesting people during these breaks about both science and ordinary everyday stuff. So after all, these breaks were great.

Anyway, the coffee breaks were a necessity that could have been spiced up a little, but the surroundings were fantastic! Keystone is the prettiest littlest winter wonderland as if taken from Bambi on ice! The snow was thick and fuzzy and lay as an embracing eiderdown on the ground and on the branches of the pine trees. People were ice-skating just outside the window of our condo, and not far away was a ski resort with great slopes on which I was so fortunate to spend an afternoon. There was a drawback to this whole splendour, however, being the thin air due to the 2.800 m altitude. In the beginning I woke up in the middle of the night with difficulties to breathe. It got better with time, but I never got rid of being breathless by just climbing the stairs. It also had its impact at the conference, where some of the presenters being too eager to get to the podium, started out their presentation one. word. at. a. time. Others talked real slow to compensate. I figured out that sipping frequently from a glass of water would do the trick. And this was also in perfect compliance with the constant reminders from staff to drink lots and lots of water. Being a kind expression of care it was stressed in each coffee break that water was important in the thin air. Some of the presenters even adopted this appeal and concluded their presentations with the drink-water-chorus. I drank a lot of water.

Nevertheless, the scientific program was great, and I learned a great deal about many different branches of immunology that has definitely underpinned my overall understanding of vaccinology and has broadened my perspectives of my own project. I talked to a lot of really nice and interesting people and got an insight into the great community of veterinary immunologists. It was evident that many of them already knew each other, liked each other and had been or were still collaborating with one another. On top of that I even got to present (orally and on poster) a part of my own project describing the bioinformatic manoeuvres I used to select my own PRRSV epitopes.

Furthermore, I had the great pleasure of meeting a representative from IVI in Switzerland, with whom I managed to arrange a stay at IVI to perform some experiments taking advantage of their expertise with the replicon technology.

Immunology is a really huge and complex subject with a lot of open ends and I guess conferences like this one in Keystone exist for this exact reason – to present all these open ends so that peers can sit there and say “Wow, that’s peculiar. Let’s start a project together and see if the same thing happens if we inject it into a ferret.” Academia is obviously a very central term at such conferences, but what I think is almost just as important is to meet your peers. People from all around the world that are just as fascinated and intrigued by a subject as you are. Before I went I was awestruck by the mere thought of giving a presentation in front of the experts of the universe. Thinking about it in that way is still quite intimidating, but what I experienced was that they were all just ordinary and friendly people who just happened to have the same professional hobby as I do. So all in all, this whole trip to Keystone was a great experience. Not only because of the vast amount of knowledge I gained, but also because of the social bonds that were created during the meals, in the shuttle busses, and in the late night hours at the bar.

So. Share your science. And don’t forget to drink. Water also.

As a concluding remark, I would like to express my gratitude to IUIS VIC for granting me the travel award helping me attend the Keystone Symposium and have this great and unique experience. I feel very honoured and am happy for the opportunity to return the favour by writing this report.

Thanks a lot.

Simon Welner