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Deconstructing Blood Cell Research
Building the Hematology Community

Lab Spotlight: The Passaro Lab

- December 02, 2021

Each month, Simply Blood spotlights a lab focused on the research of basic hematology, immunology, stem cell research, cell and gene therapy, and other related aspects. Get to know these different labs around the world! This month, we are featuring the Passaro Lab (https://dianapassaro.wixsite.com/imaginiche) at the Cochin Institute, France.

What is the major research theme of your lab?

I would say that the underlying question of our projects is understanding the intimate relationship between leukemia and the vascular endothelial microenvironment. Better understanding the niche involvement in hematological malignancies is a fairly hot topic, but only recently people have started looking into endothelial cells. I think they are a fascinating component of any tissue, especially the hematopoietic ones.

How long have you had your lab?

We started in January 2020, with the arrival of the first master student. From March 2020 we recruited three other members, and we just recently had another wave of new recruits.

How many members make up your lab? Students/postdocs?

At the moment we are 7, including myself, and we will be 9 in January. We shouldn't get over that, not much space left in the office! For the moment we have 2 master students, 1 PhD student, 3 post-docs and 2 technicians.

What is your approach to mentoring in this lab?

It really depends on what each one brings to the table. I try to understand what people like, how they think and what do they need from me. Then I fill the gaps as much as I can, strengthening and allowing them to explore as much as possible. I also try to push them to exit their comfort zone, especially the youngest members of my team. I have been supervising people in the past, and I've realized how much impact the first years of training have on your scientific personality, so I try to dedicate a lot of time to mentoring people. Of course, that is a mutual interaction, do not forget that nobody is a single entity in the void. I try to introduce changes moderately and slowly, without forcing and pushing people, and see how that impact my approach as well. I get a lot of input from my team members and the research we pursue is the result of several conversations, and I have learnt so much from this mutual interaction.

What was the most exciting part about starting your new lab?

A lot of things: the most exciting one is getting superpowers! As a postdoc, you have so many ideas, but you have only two hands and cannot pursue all of them. Now as a group leader, I can take lot of different scientific directions thanks to my team, and I feel so energized by it! I only have limited teaching and administrative responsibilities, and thanks to a fair amount of starting grants, I feel quite shielded and encouraged to pursue my projects at the best of my capacities. I understand that this is a very specific feature of the French system, and I am grateful for this opportunity. Obviously, I miss the days when I was always at the bench, but I try to feel as close as possible to the projects. I am still learning a lot of new things as the field evolves and from experienced people in my lab.

Also, I became a PI at the same time as I became a mum, and I have to say that the two transitions feed each other: becoming a parent does teach you that you cannot control everything, and leaving control is one of the biggest lessons I am trying to implement it in my everyday lab life.

What is the most exciting project in your lab right now?

I can't tell, it's very difficult to choose! I have a couple that are really close to my heart, for different reasons. Bioengineering the bone marrow vascular niche in vitro is one. I have always worked with mice and been less keen to use in vitro systems. But during the last years of my post-doc, I got fascinated by the bioengineering revolution and started thinking of reconstructing a complex tissue in vitro as a real possibility. This project has been ongoing for over 1 year now, and thanks to one of my talented postdocs we are getting exciting results. In other words, pushing boundaries!

Another project I care a lot about is in between mice genetics and therapeutics, hopefully one day we will be able to successfully target the microenvironment in clinics, to tackle hematological malignancies.

How do members of your lab celebrate accomplishments?

We drink! And we eat of course: we do parties here in the lab and we finally started to go out eating (I have opened the lab 1 week before the first national lockdown). Those times have been tough, as I strongly desired to create a friendly environment in our lab! We finally managed to get our first lab retreat, just last week!

As we are in France (even if we are not all French!), we try to mingle with the local approach to food and drinks. We are also starting to interact with the other members of the institute outside the strictly research environment: many good scientific collaborations are born around a beer!

What has been your greatest challenge in managing (starting?) your lab?

COVID, but I think it is the same for everyone. There are challenges every day, but I think that the most stressful one is dealing with patience. The transition from postdoc to PI is a process requiring an awful lot of time. As a result, you start thinking and pondering about "your questions" before starting the application process, and then you hold them up during job and grant interviews, relocation, seminars, introductory lectures at your new institute. And in the meantime, 2-3 years have gone. Having the money, the tools, and the people to pursue those questions is a lot of effort and time, and this incubation period is quite frustrating. Only now I am starting to tackle them experimentally, so the feeling of having nothing done while putting things in place has been the biggest challenge.

What advice would you have for new investigators just opening their lab?

A precious advice for everyone: if you have money, hire technicians before postdocs and PhD! Techs are simply essential to start your lab and set your protocols straight. They really are your best friends, and they will tell you what is practically feasible and what it is not. Bringing intravital microscopy and organoid models wasn't trivial at all and having technicians helping was unmeasurable. Once those steps are sorted, you can start hiring postdocs and PhD students.

Does your lab have any fun traditions?

We started the lab retreat tradition, a full day of fun and activities! We did an escape game, and we built our own leather wallets. It's incredible how hand crafting is similar to bioengineering!

Blog post contributed by Alessandro Donada, Ph.D, a member of the ISEH Publications Committee.

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