

CELL SCIENTISTS TO WATCH

Cell scientist to watch – Edgar Gomes

Edgar Gomes earned his PhD at the University of Coimbra in Portugal under the supervision of Carlos Duarte. He then travelled to the USA to train as a postdoctoral fellow in the laboratory of Gregg Gundersen at Columbia University in New York. Before moving back to Portugal in 2014, Edgar was a group leader in the Myology Institute at the University of Pierre and Marie Curie in Paris (France) as an INSERM Avenir Fellow. His lab investigates the mechanisms of nuclear positioning in skeletal muscle and in migrating cells.

What inspired you to become a scientist?

I was always curious to know how things work from the mechanical point of view. I've always been a big fan of playing with Lego, and I remember using it to make machines and trying to understand how they work. Then biology came along and I became interested in biochemistry.

And what motivates you now?

I get fascinated by trying to understand how cells behave in different situations. Playing with the new technologies to address problems also motivates me a bit. So, on one hand it's the scientific questions, and on the other hand I am a bit of a geek, so I like to use new approaches when solving problems.

What problems are you addressing in your lab?

My lab is interested in how cells are organised. In particular, we want to understand how the nucleus is connected to different cytoskeletal elements. This is important for one of our main subjects, which is nuclear positioning in cells, but also for signal transduction directly into the nucleus by mechanical forces acting on the nuclear envelope. Our favourite systems are migrating cells and skeletal muscles. Skeletal muscles comprise multinucleated cells. The nuclei are in different places during the formation of a fully matured muscle, and we and others have found a role for that positioning in muscle function. Another aspect of nuclear positioning in muscles is that there are a lot of muscle dystrophies caused by mutations in specific genes that lead to mis-positioning effects. We use these diseases to better understand the role of nuclear positioning in cells and, at the same time, our work leads to a better understanding of these diseases. It could be the basis for future therapies, which is something that also motivates the lab.

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What challenges did you face when you started your lab that you didn't expect?

When I was looking for students and postdocs, I expected them to have the skills and characteristics that I have, and in addition, to also have the skills that I do not have. The challenge was to realise that these students and postdocs do not exist. You have to find the best qualities in your people, even if they are not doing things the way you like. Having my own lab and being more of a manager, I learned to adapt and discover the strong qualities of each person. Use their knowledge the best way, don't just expect them to do things your way. To this end, people I hire usually come from different areas, because I want them to bring knowledge to the lab that I don't have.

Are there any new challenges that you're facing now?

One big challenge I have now is that I'm away from the bench more and more, which is both good and bad. It's good in that I can dedicate more time to think about the big picture and how to push and try new things, and hire the right people for the right projects; at the same time, however, I don't even know where some things are in the lab and how they work, so I really have to trust what is going on. Most of the time I think it's bad, but I just can't follow everything, and so getting used to this is a bit of a challenge.



My favourite game became part of my job and my life...

Do you miss doing experiments?

I still try to do an experiment here and there, but in the end it's just very difficult to find the time to do an experiment from beginning to end. I miss it, because when you are at the bench it's the only thing that you worry about. You are very concentrated on the experiment and the rest doesn't matter. Now, because so many things are happening at the same time I (unfortunately) don't have that luxury of just concentrating on one thing.

What advice would you give on establishing successful collaborations?

I think the best advice is to go for a drink when you meet your collaborator, because it's the best way to establish a collaboration. It's very difficult to have a fruitful collaboration when you're just doing it in a very professional way without empathy between two people. I think it's important that the two people get along. It's not like they have to be friends, but you have to have fun in the collaboration, otherwise it's more difficult. It can be done, of course, but enjoying talking with my collaborator is extremely important for me.

“...be rigorous, [...] always work on things that you really like”.

How can one get the most out of attending meetings?

Talking to people and building a network is very important, and that's what I tell my students and postdocs. When you go to a meeting, you shouldn't just listen to the talks and then go back to the hotel. Go see the posters – it's the most important place to interact with people. Another piece of advice I would give to people is to ask questions in talks. If you make the effort to ask a question, it forces you to understand what is going on.

What is the best science-related advice that you have ever received?

One thing is to be rigorous, and the other is to always work on things that you really like, because science is not an easy career. If you really don't like it, it's not worth it.

What is the most important advice you would give to someone about to start their own lab?

Choose the right people, because if you don't get the right people who you have fun working with, it can be a painful problem when you're starting a lab. It's people who you know you can communicate with in the lab. I do full-day interviews, where I try to interact as much as possible with the applicant and have the person interact with people in my lab as much as possible, so the decision can be very well balanced. If you make the wrong choice it can lead to problems that eat a lot of your energy to solve. It can create a bad environment in the lab and you don't want that.

How do you achieve a work-life balance, especially when starting out as an independent investigator?

What I can say is that it's not easy. I have the advantage (and the disadvantage) of my wife also being a group leader, so she understands very well what it is to run a lab. That also allows us to be very flexible and we end up supporting each other. We have a 3- and a 5-year-old, who we had when I was setting up the lab. It wasn't easy, but everything worked fine, so it's always feasible.

Could you share with us an interesting fact about yourself that you wouldn't put on your CV?

I've been playing music since my undergrad. I usually play bass guitar. Currently I am playing in a band called Tricycles (<http://bit.do/tricycles>) and we've been doing some gigs, so maybe one day we should start a world tour [laughs].

Edgar Gomes was interviewed by Anna Bobrowska, Editorial Intern at Journal of Cell Science. This piece has been edited and condensed with approval from the interviewee.