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FIRST PERSON

# First person – Robert Herzog

First Person is a series of interviews with the first authors of a selection of papers published in Journal of Cell Science, helping early-career researchers promote themselves alongside their papers. Robert Herzog is first author on 'Poji: a Fiji-based tool for analysis of podosomes and associated proteins', published in JCS. Robert is a PhD student in the lab of Prof. Dr Stefan Linder at University Medical Center Eppendorf, Hamburg, Germany, investigating the structure, function, interaction and regulation of podosomes in primary human macrophages.

Robert Herzog

**How would you explain the main findings of your paper in lay terms?**

Our main focus is the podosomes of primary human macrophages. To better understand their function and regulation, we treated the cells with several chemical agents and inhibitors. We thought this would only influence specific properties of podosomes and initially focused on changes in podosome numbers. However, we not only saw differences in podosome number or size, but also in their spatial arrangement and protein association, as well as in cell size and protein distribution throughout the whole cell. We realized that our current tools were not fit to detect all differences between treated and untreated cells that we saw by eye. Thus, we developed a semi-automatic Fiji-based macro to quickly analyse and connect the properties of the entire cell, the part of the cell that is covered with podosomes as well as of single podosomes.

**Were there any specific challenges associated with this project? If so, how did you overcome them?**

It might be surprising, but I did not have any experience with programming and IT before (before this I mainly used computers for games). Luckily, my co-authors had experience in using the macro language of Fiji and shared their own codes, together with comments and continuous great advice and contributions. Additionally, I used the documentation and extensive discussions of the Fiji community and thus was able to learn the basics of the macro language, which was the foundation for constructing the tool. Afterwards it was a constant learning process to be able to construct more and more difficult functions for the macro.

**"In the end, knowing the journey that lies behind you makes it all the more rewarding to start the finished macro and see it working without error."**

**When doing the research, did you have a particular result or 'eureka' moment that has stuck with you?**

Since I had to learn the basics of programming from scratch, the entire development of the tool was littered with small 'eureka' moments, whenever I was able to solve problems along the way that I thought were insurmountable. However, one of the most memorable moments was when I realized that a function I constructed for days in a quite complicated fashion already existed as a one-line command that I just didn't know of before. I sarcastically exclaimed 'eureka' and deleted half of my code, since it was useless. In the end, knowing the journey that lies behind you makes it all the more rewarding to start the finished macro and see it working without error.

**Why did you choose Journal of Cell Science for your paper?**

Several colleagues in my lab had published in JCS before and recommended it due to the constructive and fair feedback during the revision process. Additionally, the tool we created is aimed mainly towards the invadosome community, which is strongly represented at JCS.

**What motivated you to pursue a career in science, and what have been the most interesting moments on the path that led you to where you are now?**

I have always been very curious about the 'how's' and 'why's' in life and was lucky to have a chemistry teacher who regularly used the current subject of his lessons to explain how normal things from daily life are affected by it. Because of this, I realized that most things around us are not 'just there', but their existence and interactions can be explained. As someone who wants to understand the reason behind everything, it was natural for me to go into science when I finished school.

**What's next for you?**

On (hopefully) short terms, I am aiming towards gaining my PhD title. Afterwards the road is less clear, with the possibilities of

Robert Herzog's contact details: Institute for Medical Microbiology, Virology and Hygiene, University Medical Center Eppendorf, Martinistr. 52, 20246 Hamburg, Germany.
E-mail: r.herzog@uke.de

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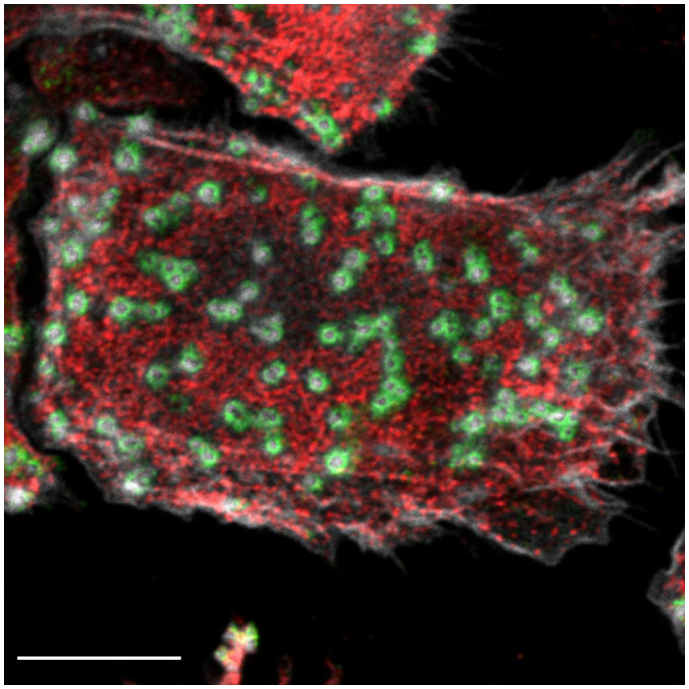

**Primary human macrophage after 30 min treatment with 10 µM blebbistatin. Stained are F-actin (grey), myosin IIA (red) and vinculin (green). Scale bar: 10 µm.**

leaving academia, staying in academia or going abroad for a postdoc and deciding afterwards all being on the table. No matter what route I will follow in the end, I don't see myself leaving science.

### Tell us something interesting about yourself that wouldn't be on your CV

I like doing experiments in my spare time as well, especially if they involve colours, noises and fire. But of course I always keep them as safe as possible as I am also a very cautious person. Setting your hand on fire, for example, is something I would never try at home! (I went out onto the balcony instead.)

#### Reference

**Herzog, R., van den Dries, K., Cervero, P. and Linder, S.** (2020). Poji: a Fiji-based tool for analysis of podosomes and associated proteins. *J. Cell Sci.* **133**, jcs238964. doi:10.1242/jcs.238964