

## FIRST PERSON

# First person – Jana Jentzsch

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. Jana Jentzsch is first author on 'Microtubule polyglutamylation is important for regulating cytoskeletal architecture and motility in *Trypanosoma brucei*', published in JCS. Jana is a PhD student in the lab of Professor Klaus Ersfeld at the Department of Biology, University of Bayreuth, Germany, investigating the molecular mechanisms underlying diseases.

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

*Trypanosoma brucei* is a small single-cell parasite that causes African sleeping sickness in humans. Epidemics of this disease were a health problem in the past but are now well controlled. However, *T. brucei* is still a well-suited model organism for molecular research. One interesting structure to look at is the cytoskeleton, which is the major determinant of the parasite's shape. It is composed of microtubules; hollow tubes made of the proteins  $\alpha$ - and  $\beta$ -tubulin. The cytoskeleton in *T. brucei* is extremely stable, but the parasite has to go through morphological rearrangements to enable cell division and to switch between its life cycle stages in the tsetse fly and humans. One possible level of regulation of this stability are various microtubule modifications. We investigated the role of microtubule glutamylation. In *T. brucei*, there are several putative enzymes that may catalyze modifications like glutamylation (glutamylases) on microtubules. We were able to show that a knockdown of two putative glutamylases results in a reduction in glutamylation of tubulin and affects the cytoskeletal architecture and cell motility in trypanosomes.

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

I can't think of any specific challenges during this project. Some experiments were trial and error, but you can overcome this with a lot of patience and discussions with your supervisor and colleagues.

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

There were many fascinating things during my research, but the most fascinating was when I first saw the unique phenotype of the glutamylase-knockdown cells. It is just amazing that you can manipulate the smallest things in cells, and the result is a totally different looking cell.

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

During my time as a PhD student, I read a few articles published in JCS, as it covers a wide variety of topics. I think my article fits well in this journal and will reach many readers.

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Jana Jentzsch

### Have you had any significant mentors who have helped you beyond supervision in the lab? How was their guidance special?

In our lab, the work climate is characterized by a more familiar atmosphere. If there was a problem with experiments, we all stuck our heads together and searched for solutions.

### The interesting thing in science is that the more you look into it, the more fascinating it gets.

### 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?

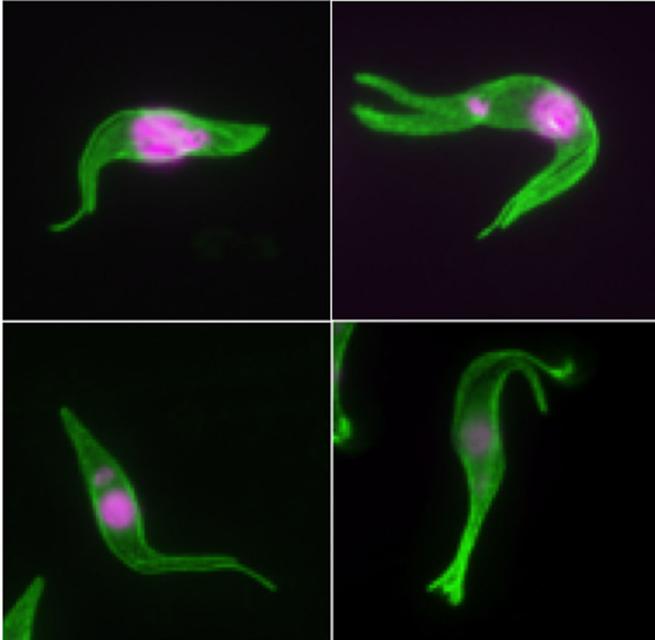
I'm a very curious person, and in science, there's always something new to explore. So I studied biology, and although there was a lot to take in during the basic studies, the molecular lectures were so exciting that I am now stuck with science. The interesting thing in science is that the more you look into it, the more fascinating it gets.

### Who are your role models in science? Why?

My role model is Alexander Fleming, because he showed that amazing things can happen even if you're a bit clumsy.

*T. brucei*  
wildtype cells

*T. brucei* cells  
after knockdown of  
glutamylases



*T. brucei* wild-type cells (left) and *T. brucei* after the knockdown of two putative glutamylases (right).

#### What's next for you?

First I will finish my PhD. I don't have a plan yet for what's next, but I'm open to any possibilities, and if there is an opportunity, it can go either way.

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

I like going camping and sailing. Also, I enjoy having some beers at the beer garden with my friends.

#### Reference

Jentzsch, J., Sabri, A., Speckner, K., Lallinger-Kube, G., Weiss, M. and Ersfeld, K. (2020). Microtubule polyglutamylation is important for regulating cytoskeletal architecture and motility in *Trypanosoma brucei*. *J. Cell Sci.* **133**, jcs248047. doi:10.1242/jcs.248047