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FIRST PERSON

First person – Emily Herman

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. Emily Herman is the first author on 'Identification and characterisation of a cryptic Golgi complex in *Naegleria gruberi*', published in Journal of Cell Science. Emily is a postdoctoral fellow in the lab of Dr Joel Dacks at the University of Alberta, Canada, investigating evolution of the membrane trafficking system in microbial eukaryotes.

Emily Herman

How would you explain the main findings of your paper to non-scientific family and friends?

The Golgi body is a compartment inside cells that acts like a distribution and shipping centre for proteins and sugars. In most cells, the Golgi is a set of flattened membranous sacs that resembles a stack of pancakes. However, a few organisms do not have Golgi bodies with this 'stacked' appearance, and have 'unstacked' their Golgi bodies multiple times independently of each other. One such organism is the soil amoeba *Naegleria gruberi*, a single-celled organism that is related to *Naegleria fowleri* (also known as the 'brain-eating amoeba'). Using only a microscope, one cannot directly see a Golgi body in *N. gruberi*, raising the question of whether it has a Golgi, and if it does, how it is organized? In this paper, we use a fluorescent antibody to a known Golgi protein in order to visualize the Golgi in *N. gruberi*. We show that a Golgi is indeed present, and appears as tubules spread throughout the cell. Not only is this the first time the Golgi body has been observed in *N. gruberi*, but it is also the first time that a distinctly tubular Golgi has been seen.

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

This project was a joint effort between three labs on two different continents, and while Skype meetings are great, they aren't a complete substitute for in-person interaction and collaboration. This was helped immensely by a Royal Society International Exchanges grant, which allowed us to travel to each other's labs. For the PIs, this meant that the project was well-organized and executed, whilst trainees were able to add new computational and benchwork techniques to their repertoires.

"Seeing the first images was incredible, and I think there was a sense among all of us that this was something momentous"

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

Yes – when we acquired the first fluorescence microscopy images of the *Naegleria* Golgi. It was well after most people had left for the day, and Dr Tsaousis, Dr Miller and I were hunched over the microscope's computer screen in this tiny, otherwise pitch-black, room. Seeing the first images was incredible, and I think there was a sense among all of us that this was something momentous; we were the first people to see a Golgi body in this organism! We were so thrilled, we immediately sent the images to Dr Dacks, who was just as excited.

Have you had any significant mentors, and how have they helped you?

My PhD supervisor, Dr Dacks, has been an incredible mentor. He has always pushed me to think philosophically about my research and how it fits in with the field of eukaryotic evolution. Aside from the excellent scientific training I received, I also learned a lot from him about how to manage multiple projects, be a good colleague and mentor myself, and the story-telling aspect of writing papers, so I'm very grateful for that.

What's the most important piece of advice you would give first-year PhD students?

Read widely, and practise reading papers with a critical eye. And don't be afraid to ask questions!

What changes do you think could improve the professional lives of early-career scientists?

Early-career researchers are typically in their late 20s and 30s, which is also the time when many people want to put down roots and perhaps have families; they don't necessarily want to move for their career, especially if they have to coordinate with a spouse. I would love to see more job security, but particularly more support for stable, research associate-type positions that would let scientists stay in academia, while fitting with their lifestyle and goals.

What's next for you?

I would very much like to remain in science and in academia, but I think there are a lot of other interesting questions to ask and problems to solve outside of these areas. So ultimately, I am exploring the options available to me.

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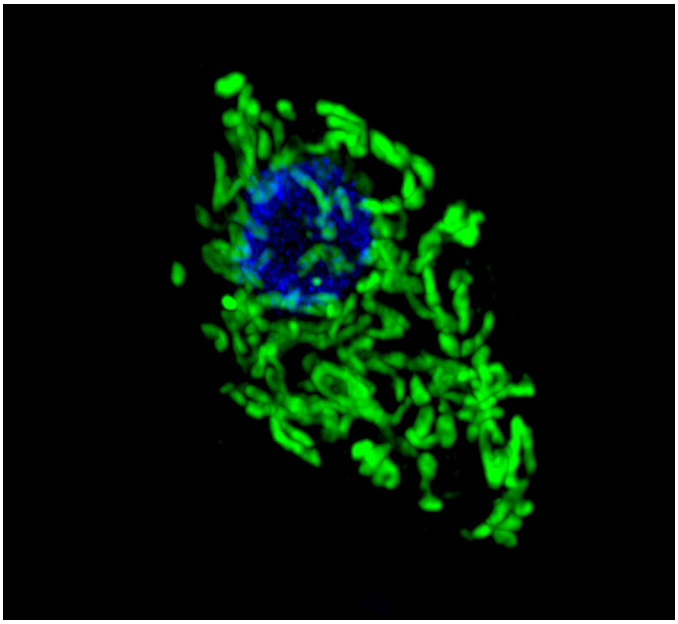

***N. gruberi* cell with the Golgi (NgCOPB) shown in green.**

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

My partner and I renovate and flip houses as a kind of side-project. It is hard work, but in the end it is very rewarding to look around and say, 'I laid these tiles, I wired this room, I put up this drywall', and so on. I also try to be really active outside of the lab because I spend most of my time sitting at a desk, so I do a lot of rock climbing and weightlifting.

Reference

Herman, E. K., Yiangou, L., Cantoni, D. M., Miller, C. N., Marciano-Cabral, F., Anthonyrajah, E., Dacks, J. B. and Tsaousis, A. D. (2018). Identification and characterisation of a cryptic Golgi complex in *Naegleria gruberi*. *J. Cell Sci.* **131**, jcs213306.