

FIRST PERSON

First person – Ari Dehn

First Person is a series of interviews with the first authors of a selection of papers published in Journal of Cell Science, helping researchers promote themselves alongside their papers. Ari Dehn is first author on 'Epithelial mechanics are maintained by inhibiting cell fusion with age in *Drosophila*', published in JCS. Ari conducted the research described in this article while a Research Associate in Dr Vicki Losick's lab at Boston College, MA, USA. Ari is now a Research Assistant at The Jackson Laboratory, Bar Harbor, ME, USA, where they are interested in exploring new ideas and using science to further understand human health and disease.

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

Our bodies change as we age, and there's still a lot we don't know about these changes and how they affect how our bodies' function. Fruit flies, with their short life span and wide variety of available compatible tools, are a good animal model to study aging. The tissue we study, in the fruit fly abdomen, is made up of small, well-organized cells with one nucleus when the fly is young, but as it gets older, these cells start to merge together, creating larger cells with many nuclei. We can prevent these cells from fusing together, and when we do that, the tissue not only looks more like that of a young fly, but it also allows the old flies to bend their abdomens quickly just like a young fly. Similar to in fruit flies, there are parts of the human body where the cells become larger and have many nuclei during aging, including part of the eye. A particular gene associated with causing larger cells with many nuclei even earlier than usual in the eye is also found in fruit flies and causes the same sorts of changes. In the fly, we can do experiments that would be hard to do in mice or humans, like testing whether we can prevent the cells from merging and keep the tissue looking young. Thanks to this gene, which produces flies that are prone to developing these large cells with many nuclei, we can see such effects!

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

The hardest part of this project was getting the Brainbow assay to work. The abdominal epithelium, particularly that of the old flies, just doesn't produce a very strong coloring from the Brainbow construct. Finding the right combination of antibodies and imaging methods to get a good image took a lot of troubleshooting.

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

The Journal of Cell Science is a well-respected, well-read journal that we thought was a good fit for our story.

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 liked puzzles and figuring things out for myself; science gave me the opportunity to do that. Answering one question

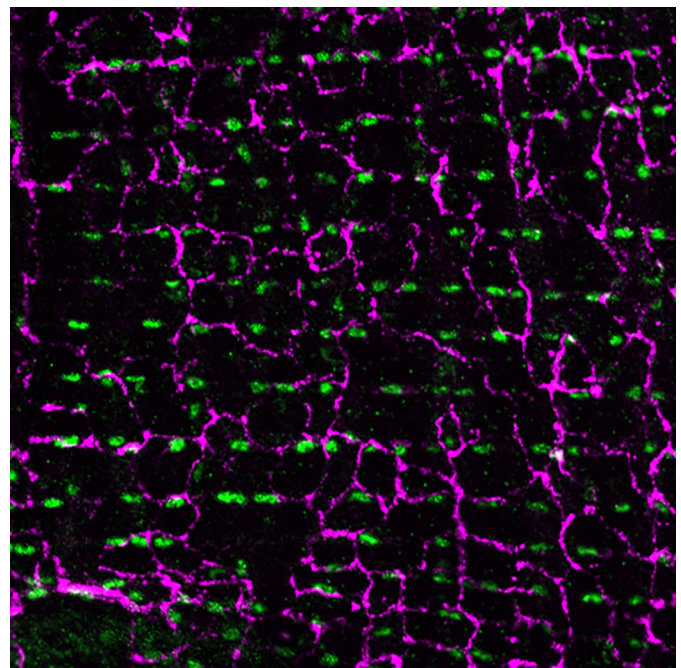


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in my research usually leads to at least two more questions. There's always more that we don't yet know, and more paths to explore.

What's next for you?

I just started a job in the Rare Disease Translational Center at the Jackson Laboratory in Maine, and I'm excited to be getting to work on human health and disease by using an animal model (mice) that is more similar to that of a human than any I've studied so far.



Pictured is a 40-day-old fruit fly abdominal epithelium with large, multinucleated polyploid cells.

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

In my free time, I like to hike and travel. I'm hoping to one day visit all of the U.S. National Parks. I've been to 36 already.

Reference

Dehn, A. S., Duhaime, L., Gogna, N., Nishina, P. M., Kelley, K. and Losick, V. P. (2023). Epithelial mechanics are maintained by inhibiting cell fusion with age in *Drosophila*. *J. Cell Sci.* **136**, jcs260974. doi:10.1242/jcs.260974