

FIRST PERSON

First person – Nicholas Iannantuono

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. Nicholas Iannantuono is first author on 'Rab11FIP1 maintains Rab35 at the intercellular bridge to promote actin removal and abscission', published in JCS. Nicholas is a PhD student in the lab of Dr Gregory Emery at the Institute for Research in Immunology and Cancer, Université de Montréal, Canada, investigating the mechanisms that govern how cells faithfully divide their contents and separate into two independent entities.

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

When cells divide, a process that is critical for growth and tissue repair, they remain attached together by a type of bridge that contains, among other things, the remnants of the actin cytoskeleton, a sort of cellular skeleton. Normally, this cellular skeleton is removed through the action of different proteins, including one named Rab35. Incorrect removal of this actin skeleton can lead to binucleation and genetic instability, which is a hallmark of cancer. In our study, I showed that another protein, called Rab11FIP1, is critical for ensuring that Rab35 remains present in this bridge, thus leading to timely actin skeleton removal and normal cellular division.

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

Owing to the fact that my supervisor's lab is mostly focused on collective cell migration and the fact that the student who laid the groundwork for my project prior to my arrival had already graduated and left the lab, I was left to my own devices with regards to the acquisition of tools and expertise to push this project forward. While this may not be a specific technical or experimental challenge, it was one that I found very stimulating and, looking back now, it may have taken longer to see the project through, but I am very proud to have accomplished it on my own.

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

Near the end of my project, I was trying to solidify the link between Rab11FIP1 and Rab35, and I remembered that low doses of an actin-depolymerizing drug called latrunculin A had been shown to rescue the cytokinetic phenotypes observed after Rab35 depletion. I had never worked with this drug before, and I was using a different cell line than was used in those studies, but I tried a few different doses similar to those used in the previous studies and I obtained the exact result I was hoping for, a full rescue of every phenotype.

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Nicholas Iannantuono

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

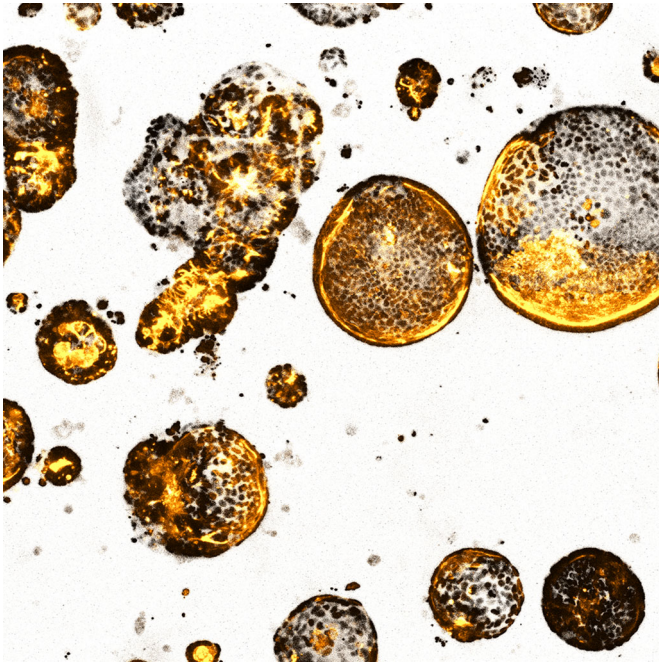
I chose Journal of Cell Science because it publishes great research in different fields, including mitosis and its underlying cell biology. Choosing this journal allowed me to share my research with a wide array of scientists interested in this field.

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

My supervisor Gregory Emery has given me an excellent opportunity to become an independent scientist. He masterfully walked the line between project oversight and supervision, while letting me pursue all of my own lines of questioning with his 'my door is always open' policy, which fostered my critical thinking and scientific independence. I wish more up-and-coming scientists could meet supervisors like Gregory.

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've always pursued knowledge; I have an insatiable curiosity for things I don't understand. Science was the best way for me to acquire the tools necessary for understanding a little bit more about the world around me.



Caco-2 cells form cysts when grown in 3D culture, and form a lumen with an apico–basal polarity. Rab11FIP1 depletion strongly affects this polarity, leading to inverted polarity and disorganized cysts, as can be seen in this image where a normal spherical cyst on the right maintains normal polarity, while the cyst on the left lacks sphericity, shows disorganized polarity and has random outgrowths of cells.

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

I love outdoor activities, be it hiking, biking or camping. I've lived in big cities most of my life, and my work often has me indoors for extended periods of time trying to understand the really small. Being outside really helps to ground me.

Reference

Iannantuono, N. V. G. and Emery, G. (2021). Rab11FIP1 maintains Rab35 at the intercellular bridge to promote actin removal and abscission. *J. Cell Sci.* **134**, jcs244384. doi:10.1242/jcs.244384