First Person – Xiangchuan Wang

How would you explain the main findings of your paper in lay terms?
To generate large amounts of vigorous sperm, homologous chromosomes and cytoplasm components need to be segregated into daughter cells quickly and accurately. Cell cycle regulators and RhoA effectors mainly dominate chromosome segregation and cytokinesis during spermatogenesis. In contrast to the more common sequential nature of these two processes, spermatocytes adopt a different but more efficient strategy in which cytokinesis initiates earlier than the metaphase-to-anaphase transition and chromosome segregation, and completes cell division in a shorter time.

Were there any specific challenges associated with this project? If so, how did you overcome them?
In the beginning, I was obsessed with the accurate and quick identification of primary spermatocytes that will enter into meiosis I, as it is difficult to improve given the limited number of samples. To overcome this, I spent lots of time reading many papers on the topic and analyzed the nuclear morphology of spermatocytes to confirm the cell stage.

When doing the research, did you have a particular result or 'eureka' moment that has stuck with you?
Definitely, I think every scientific researcher in our group had this moment. When observing the pre-anaphase contractile ring assembly in spermatocytes, we were fascinated by the uniqueness of spermatocytes. Then, we decided to carry out further investigation, and finally reported our findings in JCS.

Why did you choose Journal of Cell Science for your paper?
In the beginning of my research career, JCS – a first-rate journal – made a deep impression on me. And many papers in this journal enlightened me to a large extent in my daily experiments.

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 attracted to the life sciences. The first time I observed the development of a zebrafish embryo in the lab of my Master’s degree supervisor, Professor Yun Li, I was touched and motivated by the intriguing activities of life. It was also the moment I decided to participate in life science research.

What’s next for you?
Currently, I am carrying on another project about spermatogenesis in Dr Yu Chung Tse’s lab, and I will continue to work on finishing it in the coming years.
Pre-anaphase cortical NMY-2 (green) accumulation in the most proximal spermatocyte.

Reference