

## FIRST PERSON

# First person – Mang Zhu

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. Mang Zhu is first author on 'Proteomic analysis reveals the direct recruitment of intrinsically disordered regions to stress granules in *S. cerevisiae*', published in JCS. Mang is a PhD candidate in the lab of Thibault Mayor at Michael Smith Laboratories, Vancouver, Canada, investigating how large protein assemblies are formed in cells.

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

When cells are under stress, they will put away important resources, such as proteins and RNAs, into deposits known as stress granules. We identified many yeast proteins that go into stress granules with increased temperature. We found that such proteins are abundant in the cell and contain regions without well-defined 3D structure. These regions are also known as intrinsic disordered regions (IDRs). We also found that some of the IDRs play a very important role in deciding which proteins are going into stress granules.

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

One special aspect of this study is the sheer number of different techniques we used. Those techniques are not only limited to 'wet-lab' techniques, such as mass spectrometry and microscopy, but also bioinformatics analysis of a large dataset, which helped to inform us on additional studies that we can do in the wet lab. However, using a myriad of techniques comes with a price since it is almost impossible to be a jack of all trades in science. Luckily, we had generous help from many collaborators in this study. Working alongside them, I was able to integrate methodology that wasn't considered previously in our lab and advance this study to what it is now.

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

I had two 'eureka' moments while working on this project. The first was the identification of the set of IDRs that are sufficient to be recruited into stress granules. Previous publications suggested that IDRs might not be enough to drive proteins into stress granules. However, in light of the high enrichment of IDRs we observed in stress granule proteins, we decided to do a screen of potential IDRs that might independently lead to recruitment to the stress granule. We took a risk and it paid off. The second one was when I observed the rapid recovery of Psp2-IDR after photo-bleaching. At that time, we already knew, from FRAP experiments we had performed on many stress granule proteins and IDRs, that yeast stress granules, unlike their mammalian counterpart, are a very static compartment, and I was not expecting to see the dynamic behavior of Psp2-IDR. I vividly remember I was thrilled and texted Thibault (my PhD supervisor) right away because as far as I know, that was the first evidence showing that yeast stress granule components can also be dynamic.

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Mang Zhu

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

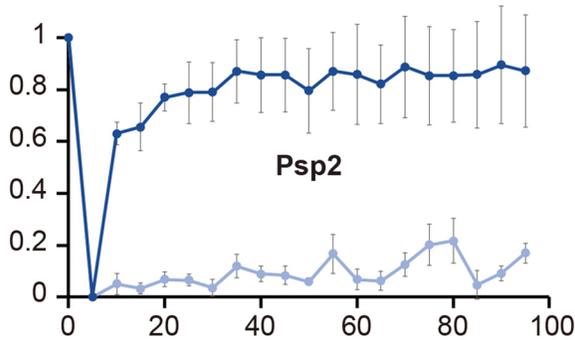
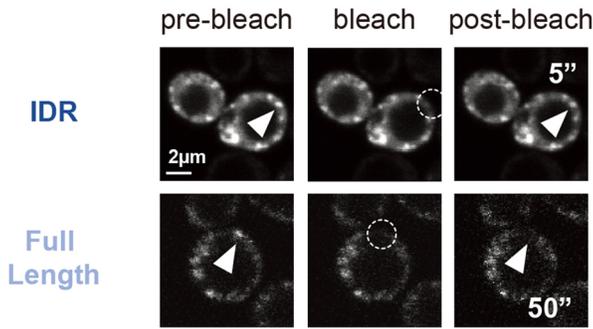
Through the time of my PhD study I have come across many publications from Journal of Cell Science. I am always impressed by the high-quality studies those papers presented and I believe the findings of our study will be of interest to many of Journal of Cell Science's readers. In addition, Journal of Cell Science offers an open-access option, making the work more accessible and the peer review history is also published along with the manuscript, which is a nice feature not commonly provided by other journals.

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

My PhD supervisor Dr Thibault Mayor has been a great mentor. He cares about his students not only with regard to the academic aspect but also on the well-being of other aspects of their life. He taught me not only how to tackle a scientific question, but also he also passed on to me his integrity in science, his passion for scientific communication and the importance of collaboration with others. He always goes out of his way to encourage his students to network and communicate with peers at conferences no matter how shy a junior graduate student you are. Without the collaboration he helped forge, this study would not be possible.

### 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 a science buff, especially towards biology. Doing research in science has always been a dream of mine ever since I was a little kid. There have been many exciting moments on the path. But the ones that I enjoy the most are when I discuss my research with others or when I go to a conference or a presentation and the exchange of knowledge often sparks new ideas or new experiments to try out.



Rapid recovery of Psp2 intrinsically disordered regions in heat-induced stress granule foci.

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

If I need to think of one person I see as a role model in science, I will say, to me, it’s Galileo Galilei. I read about his life story in a book when I was still in elementary school and that had a profound impact on me. His relentless pursuit of science and knowledge, despite the circumstances of the era he lived in, really taught me the true meaning of being a scientist.

**What’s next for you?**

I’m currently finishing up my PhD and starting to look for a post-doc position. I’m considering changing my field of study to something that is more applied but can also take full advantage of the training I had during my PhD. I am also not limiting myself to academia for the moment.

**Tell us something interesting about yourself that wouldn’t be on your CV.**

I have a wide range of hobbies and love trying new things. I like archery and hold a silver medal from BC Indoor Provincial Championships. I am also into motorsport racing, such as autocross. I race my own car and modified it myself. I swim, cycle and run, and tried my first triathlon this year at UBC. I also just got started with photography. If you cannot tell, I took the photo in this interview myself.

**Reference**

Zhu, M., Kuechler, E. R., Zhang, J., Matalon, O., Dubreuil, B., Hofmann, A., Loewen, C., Levy, E. D., Gsponer, J. and Mayor, T. (2020). Proteomic analysis reveals the direct recruitment of intrinsically disordered regions to stress granules in *S. cerevisiae*. *J. Cell Sci.* 133, jcs244657. doi:10.1242/jcs.244657.