

## Moshi Song An International Ballad

Pam Goldberg Smith

Though Moshi Song is a relatively new face in the Wu laboratory at Stanford University in California, this postdoctoral fellow brings with her a world of experience. She graduated from the Beijing Forestry University with a BS degree in Biology before completing a 2-year MMS in Biomedicine at the Karolinska Institute in Stockholm, Sweden. Most recently, she completed her PhD in Molecular Cell Biology in the Dorn laboratory at Washington University in St Louis, where she was awarded the Spencer T. and Ann W. Olin Medical Science Fellow by the Division of Biology and Biomedical Sciences.

### Tell Us About Your Background and How You Became an International Student.

When I was a very little kid, I wanted to be a school teacher. Both of my parents were teachers, although they didn't want me to follow in their path. Ultimately, I decided to study biology when filling out the form of intention for my college entrance examination because I thought it would give me the opportunity to be involved in solving human puzzles as a life scientist. I realized I wanted to study abroad not long after starting college, and I took the GRE general test during my sophomore year. I received a great offer from the Karolinska Institute, where I did both coursework and benchwork. I also got to travel around Europe in more than 15 countries, seeing historic places and meeting people of various backgrounds. Stockholm is still my favorite city, but at the time I was young and did not want to stay in the same place for more than a few years. I applied to ten graduate programs in the United States to pursue my PhD and received an offer from Washington University in St Louis.

### What Led You to Study Cardiovascular Science?

As a sophomore, my first lab experience was studying drought resistance in rice; later on, my undergraduate thesis work was on reproductive endocrinology in wild ground squirrels. In the master program at Karolinska, I did a 9-month lab rotation focusing on how Epstein-Barr virus interferes with the host ubiquitin-proteasome system, and my thesis work in another

lab was about the anabolic changes in the muscles of patients with chronic spinal cord injuries. As my research experiences gradually moved toward human diseases, I realized that—although I enjoyed myself in all those different research areas—I would like to study something related more to human health and diseases. At Washington University, I did my 2 lab rotations in cancer biology and 1 in cardiovascular science, where I found a good match with my thesis mentor, Dr Gerald W. Dorn, in 2012. He is a very smart and highly productive scientist of rigorous research standards. I could see myself learning from him in many aspects.

### What Can You Say About Your Current Project?

Not much, I'm afraid. I came to Stanford this past October and began benchwork in January under my current mentor, Dr Joseph Wu. I'm researching several mutations related to mitochondrial quality control pathway in patients using human induced pluripotent stem cells-derived cardiomyocytes and the clinical implications to find a link between novel mutations and idiopathic cardiomyopathy



Moshi Song

### How Hard Did You Work?

For my PhD, it depended on where we were on a project and whether we were about to publish or not. Most weeks, Sundays through Wednesdays, I'd work long hours, sometimes from 9 am until midnight. We'd hold meetings on Wednesday mornings and then the rest of the week, I'd work more normal hours, through to 6 or 8 PM I was the only graduate student there, so it was nice to have plenty of my own space to work in the lab. I liked to plan out my experiments in detail using a spreadsheet and performed multiple experimental tasks when possible. For some experiments, where I had to wait an hour or so between working on it, I would take this time to work on other experiments. I feel it made for good use of my time in the lab.

### What Have Been Your Main Challenges, and How Have You Overcome Them?

Writing is a big challenge. Some are born good writers, and others are not. In China, there was not much emphasis on creative writing, and as a foreigner, the language barrier is hard.

Without much training in creative writing, it was challenging to write up an interesting and eye-catching research proposal. I'm still learning how to write up research proposals and manuscripts. My mentor, Dr Dorn, spent a lot of time with me, revising my predoctoral grant applications and meeting abstracts, for example, and it got easier over time.

### What Has Been the Most Exciting Moment in Your Career?

When I saw the email from *Cell Metabolism* journal notifying me that the paper I had spent a lot of time and effort on was accepted. It went on to be a featured article in the January 2015 issue. This project showed how mitochondrial fission and fusion can coordinate and regulate mitophagy in adult mouse hearts and cultured fibroblasts.<sup>1</sup> I worked hard to improve the manuscript for months after it was initially rejected. I'm grateful for Dr Dorn's guidance and support during this process. It was also exciting to receive recognition both from my home country, with the Outstanding Self-Financed Students Abroad Award by the Scholarship Council of the People's Republic of China, along with the Barbara Jakschik Award from Washington University School of Medicine's Division of Biology and Biomedical Sciences for the best female graduate student working in the field of metabolism. It helps to increase my confidence, and I believe I can make it as a Chinese female researcher in academia in the US.

### What Do You Like and Dislike About Research?

I have to like it, in general, or I wouldn't be on this path. In particular, I like that we have so much freedom in choosing our research directions and build up hypotheses on the current knowledge of human molecular and cellular physiology. Sometimes when results are not as predicted, it is both challenging and interesting to work it out or be inspired to form a new hypothesis. I like that experiments are usually conducted in an organized, carefully planned way. And I also like that there is much less hierarchy and boundaries in the scientific community as it often is for other businesses. It is enjoyable to interact with people at different career stages at universities and international meetings. One thing that I wish could be different is the gap between experimental animal models and real humans. It is hard to see that

what researchers will find effective in animal models will sometimes fail in humans after time- and resource-consuming trials. Hopefully, in certain circumstances, human induced pluripotent stem cells-derived cells could serve as a connection between animal models and us.

### What Qualities Do You Consider Important for Success in Research?

In addition to working hard in the right environment, I think trainees need to learn to know what are the critical questions and how we can answer them. Besides, I think it is very important to have very good mentors to learn all sorts of things from, including rigorous experimental design, scientific writing, data presenting, and how to conduct a mentorship. Dr Dorn was very supportive and gave me so much guidance and good advice during the past few years. In my postdoctoral lab, there are a lot of lab members of various training background, and Dr Wu often reminds us to work collaboratively.

### How Do You Relax or Have Fun Outside of the Lab?

I get together with groups of friends on Saturday nights, and dinners with smaller groups occasionally. I also watch some television, such as *The Big Bang Theory*. I used to watch *Grey's Anatomy* for a long time but not so much anymore since a lot of the initial cast is gone, and the last straw for me was when McDreamy character (played by Patrick Dempsey) was no longer on the show. When I have some time for vacation, my parents—who live in China—visit me on a yearly basis, and we often do some traveling together. We've been to Spain, Italy, Germany, France, Belgium, Luxembourg, the Czech Republic, and all the Nordic countries, as well as Yellowstone National Park and most of the big cities in the US. Our next hope is to travel to South America or Australia, depending upon whether my parents or I will be doing the bulk of air travel.

### Disclosures

None.

### References

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