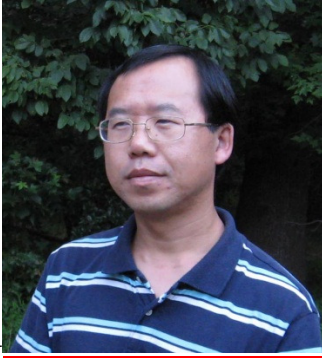


An interview with Dr. Xiaoming Wang, PMS Fellowship winner



PMSF: Xiaoming, you are our first PMSF Fellow. Congratulations! We welcome you to our extended family! Tell us a little about your childhood and what influenced you to become a researcher.

Xiaoming: In 1976, I was born in a quiet village in between a small mountain and a little river in the northeast of China. When I was a child, life was tough and sometimes there was a shortage of food, but that did not compromise the joys of childhood. I still cherish the sweet memory of mushroom picking in the woods, swimming and fishing in the river, and hide and seek in the barn. When I was a child, a college recruited a young man in our neighborhood. He became the “hero” of the whole village. At that time, I thought it might be a good idea to go to college. At the age of 12 or 13, I read a book called “The Journey to the Moon”, a real story about the Apollo 11 mission. Then it came to me - maybe it would be a good idea to be a scientist and to explore space.

PMSF: Tell us about your academic career.

Xiaoming: In 1995, I became the second college student of our village and left my hometown for Dalian, a beautiful coastal city in the north of China, where I spent eight years and got my M.D. and Master’s degree in pharmacology. After that, I moved to Shanghai and taught Biochemistry at Fudan University for five years before I came to Duke.

PMSF: Your career path is amazing, especially since you grew up in a village where there were no scientists or academicians steering you toward this type of career. What influenced your choice to become an autism researcher?

Xiaoming: In 2006, I learned more about the life of a family affected by autism on a TV documentary, which profiled how a Chinese couple fostered their severely autistic twin boys. Soon after, I got to know Dr. Yong-hui Jiang and his research. After corresponding via e-mail and phone, I decided to join his lab at Duke because his Shank3 project fascinated me very much.

PMSF: In the time you have been working in Dr. Jiang’s lab, you have been involved in developing Shank3 knockout mice and you were the first author on an [important paper](#) characterizing a mouse with a deletion of exons 4-9 of Shank3. How will your fellowship project be different?

Xiaoming: The Shank3 exons 4-9 mice only disrupted a specific set of Shank3 proteins, which I called isoform-specific Shank3 knockout. Because of this, I have generated new Shank3 mutant mice with a large deletion that disrupts the entire *Shank3* gene. The *Shank3* mice thus provide a better model to dissect the pathogenesis of PMS as well as ASD. Using the support from the PMSF fellowship, I will carry

out a comprehensive phenotypic analysis for these mice at the biochemical, synaptic, and behavioral levels and model the features seen in patients with PMS. For a long-term goal, I am interested in testing treatments using these mice.

PMSF: *Tell us about the Jiang lab. Are there any fun or special traditions in the lab?*

Xiaoming: The Jiang lab has three post docs, three Ph.D. students and a technician. Very often there are some rotating students, undergraduate students, and occasionally, a visiting scholar from China. We coordinate with each other to carry out our projects. We open champagne to celebrate everyone's achievements. Every Chinese New Year, Dr. Jiang hosts a party at his house and shows off his cooking skills.

PMSF: *If you had unlimited money for research, what would be your dream project?*

Xiaoming: My research interest is focused on neurodevelopmental disorders, including autism spectrum disorder (ASD), PMS, Angelman syndrome, etc. When it comes to the causes of ASD, I have a strong intuition they are at epigenetic levels. If I had unlimited money for research, I would do a genome wide study of histone modifications and DNA methylation for ASD first. I hope I can have my own lab to fulfill my own ideas in the near future.

PMSF: *That's an exciting area of autism research. We know there are many people with diagnoses of autism spectrum disorder who do not have genetic diagnoses. Epigenetic studies look at how the expression of genes can be altered by factors other than changes in DNA. What have you learned about Shank3 expression in people with ASD who do not have deletions or mutation of the Shank3 gene?*

Xiaoming: As far as Shank3 is concerned, we hypothesized that in autism, even when mutations of the Shank3 gene are not present, there may still be abnormal Shank3 protein levels caused by aberrant epigenetic modifications. But it remains to be challenged to detect these changes, because epigenetic modification may be cell- and tissue-specific. So, using blood cells for studies may not reflect epigenetic modification in the brain. To this end, animal models are still an invaluable tool. Postmortem brain tissues are also available for human study, but with limited quality. I hope some technical innovation will overcome these barriers in the future.

PMSF: *Tell us about your family.*

Xiaoming: In 2006, I married Xiaofeng (Grace) in my hometown. In 2008, I had two big achievements: I received my Ph.D. and had my lovely daughter, Shelly. In 2010, my son, Rain, joined our family.

PMSF: *What do you enjoy doing when you are not working?*

Xiaoming: Swimming is my favorite exercise. I taught myself how to swim in the river when I was a child. I grasped the main point after an experience close to drowning. I swam together with my friends in the sea when I was an undergraduate student. I have taught my wife and one of my best friends how to swim, and now I am teaching my daughter in the pool. When I'm not in the lab, most of my time belongs to my kids now. We swim in the pool, play chase in the forest, and count the blinking stars in the night sky with our minds roaming in space. One day, I will go back to my elementary school and tell the kids there how wonderful the world outside is.

PMSF: *Thank you for sharing your story with us and, most of all, for the important work you are doing.*