Boxun Lu, PhD [1]

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Boxun Lu’s lab website [2]

As a postdoc at NIBR from 2010 - 2012, Boxun Lu had been working on neurodegenerative disorders, in particular Huntington’s disease. Since then, he has continued this research in his lab at Fudan University in Shanghai, performing genome-wide screens to identify genetic targets that degrade the mutant protein that causes Huntington’s disease. He uses cell lines from human embryonic stem cells and induced pluripotent stem cells to validate the hits.

That his research sounds very much like it’s coming from a pharmaceutical lab is no accident. Boxun learned a great deal from his postdoc experience at NIBR and honed a desire and a commitment for his research to have a more direct impact on patients.

An industry postdoc was not his original plan, though. As a PhD student at the University of Pennsylvania, Boxun published several high-profile articles on fundamental molecular functions of neurons. He was prepared to take the next step to an academic postdoc, but then in 2009, the US and global economies nearly collapsed, and the prospects of obtaining NIH funding dimmed.

At that time, Boxun realized that, especially for biomedical research, focusing on where the resources are was key. “Without resources it is very challenging, even if you are a very good scientist. So I started to think about working on diseases where there could be a more reliable stream of funding and I could make an impact.”

Attending different conferences on neurological diseases, Boxun grew familiar with the work of industry researchers studying neurodegeneration in Alzheimer’s, Parkinson’s, and Huntington’s diseases. “There are only a few places, like Novartis, where postdocs have an opportunity to be more independent, publish, and then return to academia,” Boxun explains. Novartis was his pick, and he began working on Huntington’s disease research.

Three years at Novartis left him with some valuable insights.

He found that a practical approach has some advantages. “There are many basic, yet difficult questions that academia is trying to address, especially around mechanisms and disease pathways. For practical drug discovery, however, the process can be simplified somewhat. For example, for Huntington’s disease, you can lower the disease-causing protein levels, while continuing to work toward understanding the underlying mechanism.” Now, Boxun puts more effort into drug discovery-related research than fundamental biology and finds that there’s room for both in academia.
He also discovered cultural differences in research collaboration. “Often in academia, each lab tends to work on a problem by itself. You study the literature, send someone out to learn the technology, and bring it back into the lab. While at NIBR, Boxun found that he could readily approach another group that could offer resources such as cells or assays or expertise, or even help to do the experiments. “That’s a different kind of collaboration that I found to be very effective,” he said.

As more experienced and industry-savvy investigators like Boxun return to academic institutions, they will bring with them insights such as these, bridging the ways of thinking and working across industry and academia.

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