

Personal Statement

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Why do I want to pursue a PhD abroad?

Combining my research topic, which focuses on the neurobiology of fruit flies, I aim to explore the changes in neurons and receptors in relation to the toxicity of traditional Chinese medicine. I am acutely aware of my limitations in this field and, when encountering bottlenecks, I have resorted to reviewing literature and attending lectures. During my graduate studies, I participated online in all the Science series lectures and attended many international academic conferences. I find research on viruses particularly fascinating. During the pandemic, I worked as a volunteer and was deeply aware of the harm viruses can cause. Now, I'm eager to conduct research on viruses, hoping that in the future, I can contribute to society in this regard.

Regarding my future plans, I am determined to pursue a PhD, which has always been my dream. I want to study abroad to engage with students and professors who are passionate about research and have a pure and kind-hearted approach to science. Simply put, I want to "think like a kid" and conduct research with the innocence and curiosity of a child—driven purely by interest. I genuinely wish to join a laboratory with a strong academic atmosphere where I can quietly and diligently focus on research.

Academic achievements

More details in the CV

Experiences in research

During my undergraduate studies, I conducted experimental learning in Professor Qin Xuping's laboratory at The University of South China, focusing on network pharmacology. I produced one English article (not submitted) and one review article (not submitted). During my time in the laboratory, I was exposed to various research training experiences, which helped me develop a certain level of research thinking. I also published network pharmacology teaching videos on Bilibili(<https://b23.tv/sLrDFNu>), gaining over 14,000 followers and more than 890,000 total views. I gathered undergraduate and graduate students from various

universities to establish the Zhixue Network Pharmacology Team, which currently shares popular science content on Bilibili, Zhihu, and WeChat official accounts.

Graduate Studies (Phase One): I self-recommended to join Professor Zhang Rongxin's research group at Guangdong Pharmaceutical University, where I participated in molecular biology experiments in the Neuroimmunology Laboratory.

Graduate Studies (Phase Two): I am currently working in the Anti-radiation Drug and Traditional Chinese Medicine Pharmacology Laboratory under Professor Gao Yue at the Beijing Institute of Radiation Medicine. My current project investigates the relationship between *Vibrio fischeri*, fruit flies, and traditional Chinese medicine, with two doctoral students and I each responsible for different aspects of a National Natural Science Foundation project.

I have mastered relevant animal experimentation techniques, including organ collection, water maze tests, mining experiments, and small animal cardiac ultrasound. I am also proficient in using various instruments such as microplate readers, fluorescence microscopes, in vivo imaging systems, fully automated Western blotting, and fully automated RNA extraction equipment. I have gained hands-on experience with the extraction of traditional Chinese medicine, as well as techniques such as Western blotting, BCA assays, CCK-8 assays, ELISA, and PCR.

I am confident in my knowledge of fruit fly experiments, including avoidance tests, two-way choice feeding, traps, and Y-shaped maze tests. I am one of the most knowledgeable members in my research group regarding fruit fly studies (being the first in the group, I have had to explore many aspects independently). I also have a solid foundation in Mendelian randomization, network pharmacology, molecular docking and dynamics simulations, and computer-aided drug design. For details on my supplies, please refer to my CV and invention patents.

The above can prove that I didn't slack off during my undergraduate and master's studies and have received some good research training.

Future Perspective

During my doctoral studies, I don't think my master's - degree background will limit my research on viruses. It's precisely this diverse background that, when applied to a new area of study, gives rise to novel cross - disciplinary perspectives. And given my youth, I'm confident I can learn whatever is necessary. I am an energetic individual who finds it difficult to stay idle, and I come from a rural background. So I cherish the opportunity to study that I have now, and regardless of the challenges that lie ahead, I am determined to achieve my goals.