

The NIBB Internship Program

The NIBB Internship program, which started in 2009, is a hands-on learning course for overseas students designed to give high-quality experience in real world research and a focused education in biology. At the same time, this program aims to internationalize graduate students from The Graduate University for Advanced Studies, SOKENDAI, giving them the opportunity to get to know students and interns with differing cultural customs. Another goal of the program is to build connections through providing education to the people who will form the core of international research networks in the future.

To participate in this program, applicants who would like to experience research at NIBB must supply the name of the lab they would like to visit as well as their reasons for choosing it, and a letter of recommendation. Based on this information, applicants are chosen to spend set periods of time participating in specific research activities in the lab they applied for. Round trip airfare and housing expenses are provided by the NIBB Internship Program.

In FY2020, due to the global spread of COVID-19 and subsequent attempts at preventing further infection, this program mainly accepted international students attending universities in Japan. Consequently, two international students, one from the Philippines and the other from the United Kingdom, were selected. Because of the situation in Japan, one of them came to NIBB in March 2021, and the other will come during FY 2021. Furthermore, we received applications from two other students who belonged to overseas universities and were staying in Japan due to circumstances unrelated to the Internship Program; one of whom was subsequently selected and stayed at NIBB for two months.

Report from a participant Sea Hee Yook Imperial College London

I immersed myself in the NIBB internship program as an undergraduate student who had just completed her first year of a Medical Biosciences degree at Imperial College London. Although I had limited experience in conducting experiments in a professional laboratory, I was motivated to intern at Professor Aoki's laboratory specializing in quantitative biology upon reading one of his publications. Among the other host labs, Professor Aoki lab's unique approach in presenting scientific results through microscopy visualization and precisely quantified data appealed to me as an opportunity to obtain skills in both practical research and scientific communication. Throughout the course of the next month and a half, I was able to get a deep insight into using advanced techniques and equipment to visualize and model various intracellular mechanisms.

My research primarily focused on examining the proteins involved in controlling the cell cycle of *Schizosaccharomyces pombe*, otherwise known as fission yeast. The progression of biochemical events from G1 to M phase in its cell cycle is known to be regulated through a single CDK-cyclin complex composed of Cdc2 and Cdc13, alongside the activation of additional protein substrates at distinct timepoints. To

examine such properties, I conducted confocal fluorescence imaging and quantitative analysis of the images.

Whilst being engaged in using various imaging tools, I was also introduced to basic laboratory techniques such as western blotting, transforming plasmids into cell lines, designing PCR primers, and conducting swift but precise DNA work. Additionally, I learned about the importance of performing detailed experimental planning, careful observation, interactive discussions with other researchers, reliable data analysis, and effective troubleshooting to develop as a well-established researcher capable of presenting influential scientific discoveries.

Undoubtedly, the internship program provided me with an opportunity to further explore Japanese culture by encountering people with different values, interests, and lifestyles. I want to thank the NIBB for providing me with such an invaluable opportunity, and the people at Professor Aoki's laboratory for their unconditional support throughout the internship. I am confidently returning home with newly acquired skills and attributes that have equipped me to continue pursuing my passion for research.

