

## Research Visit at the Anouk Lab, The University of Vienna

Ruixuan Zhang (D3), Ogata Lab, ICR

I participated as a visiting student for six weeks at the Anouk Willemsen's lab, which is part of the Center for Microbiology and Environmental Systems Science (CeMESS) at the University of Vienna in Vienna, Austria. This engagement was supported by the ICR-iJURC Short-term Exchange Program. The center houses four research divisions covering microbiology, bioinformatics, ecology, and environmental systems science.

The Anouk lab focuses on the interactions among hosts, giant viruses and mobile genetic elements. They have refined in-situ fluorescent techniques, such as FISH (Fluorescent In Situ Hybridization) and BONCAT (Bio-orthogonal Non-canonical Amino Acid Tagging), to reveal the dynamics during giant virus infection. Specifically, they have optimized and combined rRNA and mRNA FISH protocols to reveal the localization of viral mRNA and host rRNA (ribosomes) during the virus infection. However, confirming whether the translation occurs at these mRNA-ribosome interfaces requires direct evidence. For this purpose, they have tailored BONCAT methods for giant virus infection system.

During my visit, I learned and practiced these techniques and also optimized my own research goal, using FISH technique to study tRNA localization. In addition, the organization of the institute also impressed me. It functions on an institute-wide model rather than a lab-centric one, providing extensive equipment and technical support that are accessible to all research groups. This fosters a collaborative environment where expertise is readily available across various fields. Moreover, the mixing of students and staff in shared spaces rather than segregated labs promotes interdisciplinary discussions. Throughout my visit, the warmth and support of everyone at the institute were remarkable, making my six-week stay seem to pass in an instant.

I would like to appreciate all those involved for giving me this chance, especially Prof. Ogata, Assist. Prof. Anouk and ICR-iJURC Short-term Exchange Program.

