

Research Visit at the Kapoor Lab, The Rockefeller University

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I was a visiting student for 5 weeks under the support of the ICR-iJURC Short-term Exchange Program in the Kapoor Lab of The Rockefeller University (RU). Rockefeller University is a private biomedical research and graduate-only university in New York City, New York. It focuses primarily on the biological and medical sciences and provides doctoral and postdoctoral education.

Kapoor lab focuses on the discovery and structure-guided design of chemical inhibitors, which can serve as fast-acting probes for dynamic cellular processes. They have developed an approach, which we named RADD (resistance analysis during design), that involves generating multiple alleles of a target protein with engineered point mutations that do not disrupt biochemical activity. Testing compounds against these target protein alleles and computational analyses rapidly leads to robust models for inhibitor-target binding, without the need for structural studies of inhibitor-protein complexes using X-ray crystallography or Cryo-EM. During the short-term visit, I was exposed to their high-speed research and open-minded discussion which impressed me a lot.

RU is close to Weil Cornell Medicine and Memorial Sloan Kettering Cancer Center, and the three institutes shared their resource friendly which enhanced the research collaboration. Students from any of the three institutes can attend the research seminar by guest speaker invited by any institute freely which is held almost everyday. This short-term research experience supported by this program has enriched my chemical biology expertise and increased the international presence of ICR.

I would like to appreciate all those involved for giving me this wonderful research experience, especially Prof. Uesugi, Prof. Kapoor and Ms. Kato.

