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**School Year:** Graduated in September 2022

**Lab:** Evolutionary Genetics Laboratory

**Conference:** The Annual meeting of the Society for Molecular Biology and Evolution  
23rd – 27th July 2023

### Report:

I had a great opportunity to attend the Annual Meeting of the Society for Molecular Biology and Evolution 2023 (SMBE23) held at Ferrara, Italy. The city is relatively small compared to surrounding big city (e.g., Bologna and Venice) and had a non-busy atmosphere which I thought was a good character for the academic conference venue. Despite of humid and hot weather throughout the conference days, I believe that many researchers, of course including me, enjoyed exchanging latest findings and ideas in the meeting.

This conference covered a wide range of research topics such as theoretical works to explain unexpectedly large proportion of advantageous changes in unicellular organisms, field works to understand adaptations to extreme environments, and population genomics analyses to understand protein evolution.

I was able to have fruitful discussions in poster sessions. I gave a poster presentation to report our recent analyses of evolutionary forces shaping GC content in *Drosophila* (Fig. 1). We showed the variations of GC content of introns and four-fold redundant sites within CDS in *D. melanogaster*, consistent with previous studies. Our population genomics analyses suggest that directional forces may not fully explain the GC content variation and we may need to account for the heterogeneity in mutation bias. During the presentation, I was able to interact with researchers who have been working on GC content evolution in *Drosophila* and other species. They kindly gave me suggestions about datasets which are essential for my future studies.

Aside from the evolutionary genetics research topics, there were several symposiums related to topics to improve the society (e.g., IDEA, publication fees). I was able to attend a symposium for celebrating Nei-sensei's career, which was held at City Theater (Fig. 2).



**Figure 1. Discussion with a researcher during the poster presentation.**

Kitano-sensei kindly took this photo.

Although the symposium was held at a relatively late nighttime (20:45 – 22:15), City Theater was almost filled with people to listen to the memories of researchers who worked with Nei-sensei. I understood that Nei-sensei was very kind and helpful to his students and co-workers and made considerable effort to facilitate the development of the Molecular Evolution field (e.g., founded Molecular Biology and Evolution and

the Society for Molecular Biology and Evolution). One of the most impressive Nei-sensei's research attitudes many speakers were emphasizing was that Nei-sensei acknowledged the importance of thinking simply and its relationship with clear writing.

Attending this meeting was impossible without “the travel support for the students of the Genetics Program, SOKENDAI to attend and give a presentation at an international meeting held abroad”. I am immensely grateful for the financial assistance, which allowed me to share our group's effort and findings with researchers who engaged with similar problems.



**Figure 2. City Theater just before an opening ceremony.**  
The resolution is lowered from the original image to prevent individuals from being identified.



**Figure 3. Scenery from Estense Castle.**

I visited Estense Castle which is the house of the Este family who dominated Ferrara between the 13th and 16 century. This picture is from the top of the castle overlooking Ferrara.