

**TO: Nakatani Foundation**

## **Nakatani RIES GE 2019 Report**

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Your University: Heidelberg University

Host Lab in Japan: Dan Ohtan Wang, iCems, Kyoto University

**Meaning of Nakatani RIES Fellowship:** How would you describe the meaning/impact of the Nakatani RIES Fellowship

High impact for science students interested in state-of-the-art techniques, international collaboration and cultural exchange.

Complete the following sentences with the intended audience for these responses being potential applicants to the Nakatani RIES Fellowship.

- My favorite experience in Japan was...
  - Being introduced to the Japanese culture by the new friends I made there.
- Before I left for Japan, I wish I had...
  - Done more research on sightseeing activities and the area.
- While I was in Japan, I wish I had...

Had time to visit more cities.

**Research Internship Overview:** Provide a description of your research project and experience during your research internship. How did your project relate to your current or future academic interests? What was the experience of working in an international research setting like? What will you take away from your research experience this summer and what impact do you think this has had or will have on your future academic career or research interests?

The aim of the project was visualizing the distribution of YTHDF1, YTHDF2 and YTHDF3, three reader proteins recognizing the m6A RNA modification in neurons, as well as showing the effect of their depletion on axonal growth of hippocampal neurons in vitro. The experiments encompassed methods such as primary mouse hippocampal neuron culture, plasmid transfection, cell fixation and staining via immunocytochemistry, fluorescent imaging and data analysis with ImageJ. In only one month I was introduced to a dozen basic neuroscientific techniques using state-of-the-art equipment, which will prove extremely beneficial for my MSc program as it also focuses on neuroscience. Working in a group of diligent scientists with such diverse cultural and professional background was enormously enriching and has given me new insights about academia and my future professional development. Another asset was the high

profile of the lab in its field, boosted by a recent publication in Nature Neuroscience magazine, which definitely stands out in a CV.

**Lab Environment Overview:** Provide an overview of what the personal environment of the lab was like. Describe the personality and working style of your research group? What was it like working with your research mentor/s and the overall group dynamic in the lab?

Each lab possesses a unique working environment demanding a certain adjustment period for any newcomer. The general social atmosphere in Dr. Wang's lab was one of mutual respect and support and no visible social conflict. The members concentrated on their individual projects, nonetheless, they were always happy to assist each other when need be. The two weekly journal clubs provided a constant flow of new ideas, several of which were integrated into projects already underway, and kept the group informed about the most recent advancements in their field. Despite occasional miscommunication between Dr. Wang and some of her colleagues regarding details of experimental design and timing, workflow was never interrupted and assignments were completed on time. My direct mentor, a PhD student, took her duties seriously, ensuring I was following each step of the experiment, making helpful suggestions and taking enough time to answer all of my questions. Albeit her irregular daily schedule, I obtained the necessary results and was introduced to a variety of other experimental techniques by the other members. Because of international symposia and conferences abroad that coincided with my stay, Dr. Wang herself was absent during the bulk of my work. However, she made an effort to track my progress and offered valuable comments before and after the final presentation of my results. Last but not least, the slight language barrier between my colleagues did not hinder overall lab work.

**Daily Life in Japan:** Provide an overview of what your daily life was like in Japan. This could include the people you interacted with outside the lab on a day-to-day basis, food, your housing/living experience, your travels around Japan and the challenges you faced and the rewarding experiences you encountered over the course of the summer.

The first days in Japan were packed with the usual challenges of getting accustomed to a new environment. These included the hot humid weather, currency conversion, getting familiar with local public transport, learning how to operate electronic devices labelled in Japanese, acquiring adapters and an internet connection, memorizing the way to university, figuring out which foods to buy in the supermarket and many others. After this initial acclimatisation period each of us developed a daily routine. Weekdays for me began with listening to Japanese songs while getting ready for work, eating a bowl of rice garnished with different ingredients and watching YouTube tutorials to learn basic Japanese phrases. Once I discovered matcha tea I also tried to drink a hot cup every morning in silence, as recommended by the locals. I would walk to university passing the Yoshida shrine on the way, take my seat in the office and work on reports or learn Hiragana as I waited for the PhD student supervising me. The nearby student canteen became a personal favourite of mine and I savoured new tastes there everyday, invariably with a cup of green tea on the side. Although the names of the dishes were too complicated for me to remember or even pronounce, it was one of the experiences I enjoyed to no end. Lab work typically lasted until 7 PM or later with journal clubs twice a week. My colleagues were easy to

get along with and took me out to several restaurants. Admittedly, some of my most culturally, professionally and personally enriching conversations were with them. In the evening I would stroll home, sometimes buying groceries on the way, and have ramen in my room with the air conditioning on.

Every weekend I would join the other exchange students from Germany for field trips organised by ourselves or Nakatani. Our destinations included the former Imperial Palace (Kyoto Gosho), its park, lake Biwa, the Kyoto city centre, Uji, the Golden Temple (Kinkaku-ji), the Bamboo Forest, Himeji Castle, a traditional Sake brewery, museums and countless smaller temples and shrines. As we were divided into two hostels, I mostly ended up going out with the five German students staying in the same building as me. The provided housing was clean, spacious, well-equipped and overall quite comfortable.

***Experiences with Japanese Culture:*** Provide an overview of your most meaningful experiences with Japanese culture. This could be program activities or interactions you had with your lab or within your daily life in Japan that you think best exemplify aspects of Japanese culture or values. What did the experience/s teach you about Japan? What did they teach you about yourself?

The month spent in Japan left an everlasting impression on me. The anticipated “culture shock” turned out overwhelmingly positive and I discovered new things which sparked my curiosity every single day. One of the first to strike me was the architecture of Japanese buildings, especially temples with their sturdy curved metal roof tiles. Local citizens always carried a sunlight- and water-proof umbrella suitable for the daily downpours and soaring temperatures of late August and early September. A biologist at heart, I couldn’t help but marvel at all the exotic unfamiliar representatives of Japanese flora and fauna: Japanese black pines, Japanese maples and sakura trees, the omnipresent cicada exuviae and buzzing in the background, orange dragon flies, colourful beetles, large butterflies, centipedes, rare river birds and many others. Many people wore kimonos in the streets, which surprised me, nevertheless adding to the city’s charm. Furthermore, being surrounded by signs and labels in a language so different from my own was quite strange. It inspired me to start learning Japanese to the point I could read many words, count and use simple phrases. I also became a big fan of rice, dried squid, soy sprouts and Japanese cuisine in general. Several particular experiences in Japan had a considerable impact on my way of thinking and etched themselves into my memory. Firstly, the abundance of temples and shrines. At the beginning it puzzled me that they were to be found on every corner, however I gradually began to grasp their importance as havens of peace, faith and unperturbed beauty. The serenity of lake Biwa’s gentle waves, the quiet suburban alleys of Kyoto in the morning and the mystic Moon Festival were only surpassed by the feeling of drinking hot matcha tea. A woman in a tea house in Uji showed me its preparation, pouring hot water over dry tea leaves and letting them soak. What struck me was how, while serving the ready matcha, she calmly waited for the very last drop to exit the teapot before presenting the cup to me. Albeit a minor detail, I remembered that moment for the peace matcha obviously represents and ever since try to make time in my busy schedule for such instants. Having said

that, the lively street festival in Kyoto I stumbled upon one evening left me delightfully dazzled with its energetic dances, unfamiliar scents and general mood. Our visits to Kyoto Goshō and Himeji Castle taught me about Japanese history. A friend I made there took me to a Kabuki performance, which impressed me greatly with its unconventional acting style, costumes, realistic props and stage effects, and got me in touch with Japanese folklore. Perhaps the most unforgettable experience was going to Fushimi Inari with another friend who took their time to answer my questions about Japanese culture and mentality. Of course, the mere sight of Fushimi Inari's splendour also surpassed anything I had ever seen before. I was also lucky enough to receive the opportunity of attending Academic Day at the university with my lab group. I got a good overview of the projects of other groups and departments and was able to network. This was particularly interesting for me as a lot of the research was cutting-edge and at the forefront of its respective field. The presentation and accompanying tour of Sysmex in Kobe gave me an idea of scientific industry in Japan and in general, which overlaps with my future career plans. I will always remember how my colleagues would say "otsukaresama deshita" at the end of a long workday. To conclude, there are a few qualities of Japanese culture and people that really caught my attention. After the month spent in Kyoto the adjectives which come to mind are hard-working, hospitable, humble, polite, meticulous, obedient, helpful and, last but not least, smiling. Of course, a lot remains that I have yet to fully fathom. For me this stay shed light on many aspects about the world and myself. I learned about possible future careers in my field, the way people perceive me regardless of their background, how I handle different situations, what hardships I might face as a scientist in the future, more about how the brain functions, what I consider beautiful, what kind of food I like, what I believe in and what truly makes me happy. My plan of what I would like to work on in the future has also become clearer. Ultimately, the greatest challenge I faced in Japan was realizing I had to leave it all behind: the streets dotted with Tanukis, the elegant hieroglyph signs, the umami-tasting delicacies, the stained neural cells and, above all, the friends I made. I am eternally grateful for the chance I got to experience Japan in all of its beguiling uniqueness and will definitely return one day.