

Your Name: J o r i k S t o o p

Host Lab in Japan: Dr. Taiji Adachi, Kyoto University, Department of Biosystems Science

Meaning of Nakatani RIES Fellowship: The Nakatani RIES Fellowship was a great opportunity for me to gain useful research experience, make international connections, and experience a new culture. Participating in this program helped me learn more about my research interests and determine what area I want to study when I pursue my PhD. I also loved getting to meet Japanese fellows and establish connections with lab members during my stay in Japan.

Research Internship Overview: My project focused on computational modeling of tissue growth. I studied bone morphogenesis using a modelling approach based on the material point method. The aim of my research was to understand how mechanical factors and the biochemical factors Indian hedgehog (Ihh) and parathyroid hormone-related protein (PTHrP) affect overall bone shape during development. This work closely relates to my interest in cell biomechanics and computational modeling. I enjoy using computational approaches to study the intersection of physics and physiology, so working in the Biomechanics Lab at Kyoto University was a great way for me to learn about a potential application of my interests.

Working in this lab also exposed me to an international research setting. Luckily my mentors and many of my lab members spoke English so I was able to communicate pretty easily. It was also interesting to see differences in lab culture and procedures between Japan and the US. This summer experience helped me improve skills in computational modeling, communication, and scientific writing that I can apply to my future research projects.

Lab Environment Overview: I really enjoyed the environment in my lab. There were about 25 people including PhD, masters, and bachelor students with about half focused on computational work and half on experimental work. Since there were so many lab members, I didn't interact with everyone, but my PhD student mentor and PI were very welcoming and available. My project was mostly independent, so I only went to my mentor when I had questions, and I also had weekly meetings with my mentor and PI to share my progress and discuss next steps. The people in lab were very friendly and willing to join me for activities like playing soccer or eating lunch at the cafeteria.

Daily Life in Japan: On weekdays my daily life mostly consisted of lab work. I typically went into lab from about 9:30am to 5:30pm. Fortunately, my apartment was very close to the Kyoto University Yoshida campus, so I was able to walk to lab in 12 minutes. In the morning, I would sometimes FaceTime friends and family before going to lab since it would be evening on the east coast. After getting back from lab, I liked to go to the gym at a local Anytime Fitness and cook dinner. I also enjoyed going for walks along the Kamo river. The language barrier didn't cause me too many challenges in my day-to-day life. Google translate was super useful for translating kanji in stores and other places and in touristy areas many people spoke English. The most challenging aspect of my living experience was honestly just having to hang up all my laundry since I didn't have a dryer in the apartment. Kyoto is very humid, so it takes forever to dry!

On the weekends I loved to travel. The train system in Japan is great so it was very convenient for me to get around. I took a lot of day trips from Kyoto to other cities like Osaka, Uji, Nara, Wakayama, and around Lake Biwa. It was so fun to see historical sites like temples and shrines, eat amazing food for cheap prices, and enjoy beautiful scenery. For these trips I often went alone, but I also coordinated a few weekend trips with other GT fellows and lab members.

Experiences with Japanese Culture: One of the biggest aspects of Japanese culture that I appreciated was how polite and welcoming everyone is. In my lab, many of the other students tried to help me get settled and gave me recommendations for fun things to do. For example, we had happy hour at lab, played soccer together, and went to a fireworks festival. In addition to my lab members, the JP fellows were also very kind and made an effort to connect with us. My favorite memories include the nagashi somen experience and eating a huge portion of ramen at Takayasu with some of the alumni in Kyoto area.

Another aspect of Japanese culture that I enjoyed was the connection to nature and history. Many of the shrines and temples I visited had beautiful gardens and were great places to feel peaceful and appreciative of nature. It was also super interesting to learn more about the previous emperors and shoguns of Japan and see some of the traditions that are kept until today like pulling the hoko and yama at Gion Matsuri.