

Your Name: V a r u n S e n d i l r a j

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

The Nakatani RIES Fellowship provided me with an invaluable opportunity to pursue my research and career aspirations in another country - Japan. Living and working in Japan for the summer immersed me in a new culture and challenged me to adapt both professionally and personally.

On a professional level, conducting research in Japanese and collaborating with colleagues who spoke limited English pushed me to improve my communication and teamwork abilities. I learned how to convey complex ideas across language and cultural barriers, which will serve me tremendously in our increasingly globalized world.

On a personal level, being fully immersed in Japanese culture was an eye-opening and humbling experience. Simple daily tasks like ordering food and navigating transportation forced me out of my comfort zone. Learning to embrace uncertainty and difference expanded my worldview. Additionally, connecting with the Japanese Nakatani fellows and my lab members from around the globe also encouraged me to appreciate diverse perspectives.

Beyond the professional and personal growth, the Fellowship enabled me to experience the beauty of Japan. The opportunity to travel on weekends and discover the history, food, and nature made me fall in love with the country. I'm incredibly grateful for this once-in-a-lifetime chance to live abroad and flourish professionally and individually.

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 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?

During my research internship at Osaka University, I had the opportunity to work on an open-source software project called OPEN-MSI. This GUI tool leverages Python and C++ to enable personalized visualization and streamlined analysis of mass spectrometry imaging data.

As someone passionate about advancing single-cell imaging and spatial transcriptomics, leading OPEN-MSI allowed me to gain firsthand experience in developing bioinformatics solutions for generating and interpreting high-resolution cellular images. This project aligned perfectly with my academic interests and future research goals in this rapidly evolving field.

Working in an international lab in Japan was an invaluable learning experience. Adapting to a new culture, language barriers, and different lab protocols challenged me to step outside my comfort zone. I learned the importance of patience, teamwork, and persistence even when communication wasn't seamless. This experience strengthened my cross-cultural communication abilities and resilience, which will undoubtedly benefit my future global work experiences.

Moreover, being surrounded by incredibly driven scientists in my lab made me want to maximize this opportunity. My mentors and lab members work ethics and passion for advancing science motivated me to put in my best efforts. I have taken this inspiration back with me to the US to continue pursuing impactful research with renewed passion. Overall, my rewarding internship experience in Japan reaffirmed my aspirations and equipped me with new technical abilities, global competencies, and confidence to succeed in my future academic endeavors.

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?

The lab I worked in this summer had a very independent and self-driven culture. After being assigned a project, it was up to me to set goals, manage my time, and take initiative in driving my work forward. This was an adjustment coming from a more structured academic lab setting.

In the beginning, I felt a bit overwhelmed navigating this level of autonomy. However, I learned over time how to be proactive in seeking guidance and feedback. My mentor was always willing to brainstorm ideas when I hit roadblocks. Also my bi-weekly check-ins with my PI ensured I was on track. I also attended group lab meetings to see what my colleagues were working on and help contribute to the overall lab.

The overall dynamic was friendly and collaborative. The researchers came from diverse backgrounds but shared a passion for advancing the field of laser medicine, and medical devices. Outside lab hours, we often gathered for meals, karaoke nights, and weekend hiking trips. Forming these bonds helped me feel welcomed and motivated me to do my best work.

By summer's end, I had gained so much more than technical skills. This experience taught me independence, initiative, and fostered new professional relationships. Working in such an encouraging yet autonomous environment will empower me to thrive in future academic roles.

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.

My summer in Osaka was great. A typical workday would begin by cooking a simple breakfast in my apartment. kitchen before biking to the lab. The 15-minute ride to campus allowed me to soak in residential life in Japan.

At the lab, I would dive into my project until going for lunch around 1pm with my lab members. We frequented the cafeteria, trying dishes like mapo-don, tonkatsu curry, udon noodles, and more. After a full afternoon of research, I'd bike off to the Lalaport mall to discover new dinner spots. Ramen shops, soba, offered endless options to sample every night.

On weekends, I took full advantage of Japan's extensive rail system to traverse the country. Highlights included serene ancient temples in Kyoto, buzzing neon cityscapes in Tokyo, going to onsens in the mountains of Beppu, and paying respects at Hiroshima's Peace Memorial. Each city welcomed me with historical sites, natural beauty, and mouthwatering regional specialties.

While the language barrier and crowds posed some initial challenges, the kindness of local residents assured me everywhere I went. I will cherish memories made with my lab mates and Japan fellows—late karaoke nights, temple visits, and cooking lessons in the lab. This fellowship gave me lifelong friendships and an appreciation for Japanese culture that I will carry with me in my future global pursuits.

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?

Immersing myself in Japan's rich culture was the highlight of my experience. Some of my fondest memories come from the vibrant matsuri (festivals) I attended. Watching incredible displays of coordination during Fukuoka's Hakata Gion Yamakasa, being swept up in crowds gazing at fireworks in yukata's during Adachi Fireworks Festival and playing carnival games at night festival left lasting impressions.

Beyond the energy of festivals, quieter cultural practices also resonated with me. Unwinding in relaxing Onsen's with friends, doing Hanabi fireworks on the beach with the Nakatani RIES fellows, and singing our hearts out at karaoke deeply connected me to Japanese customs.

However, the most meaningful aspect was the people I met. My lab mentors welcomed me in from day one, their warmth and guidance facilitating my transition to Japan. Fellow Nakatani fellows brought diverse perspectives I learned greatly from. Locals I encountered—shop owners, travelers, residents—exemplified the genuine hospitality Japan is renowned for.

Through them, I learned the incredible power of open heartedness. Had my lab members not reached out on that first day, or locals not helped when I needed help, I would have missed out on unforgettable experiences. Overall, this trip taught me to approach new people, places, and cultures with openness. I will pay this openness forward, letting it guide me as I continue navigating the rest of my life.