

JSPS fellow's experience report
Simon Illingworth

Current position: Department of Engineering, University of Cambridge
Host institution: Department of Mechanical Engineering, Keio University
Fellowship period: January 2010 to November 2010 (10 months)
Research topic: Feedback control applied to fluid mechanics

In January 2010, fresh from my PhD, I headed to Keio University to work with Professor Koji Fukagata in the department of Mechanical Engineering. Our research proposal involved using feedback control techniques to reduce the aerodynamic drag of bluff bodies at low Reynolds numbers. We had high hopes for the research because it combined methods that I had developed in my PhD for feedback control of fluid flows with Professor Fukagata's expertise in computational fluid mechanics.

I will start with the fellowship itself. I think it is wonderful and I recommend it very highly. Being able to spend ten months doing exactly the research that I wanted to do - and navigate its twists and turns as I saw fit - was a fantastic opportunity. The JSPS fellowship gave me all the support (financial and otherwise) that I needed, and at the same time gave me the space and the freedom to pursue the research that I found so interesting.

Because the research was entirely computational, the lab that I spent my time in was full of people and computers, rather than experimental facilities. There were three things that struck me as different to my time as a PhD student at Cambridge. (Of course, it is very difficult to know if these differences were due to my being in Japan and not in the UK, or if they were specific to the labs that I was in, but in any case I think they are worth mentioning.) First, there were far more students in the lab. This was because final-year Bachelors students and Masters students also used it (albeit only some of the time). The advantage of this was that these Bachelors and Masters students got involved in lab life: they knew about the work being done by the PhD students and by each other, which was great. The disadvantage leads me on to the second difference: that there was far less space, and that the lab could feel quite crowded at times. The third difference I noted was that it was common for people to stay at the lab until late in the evening - although whether this meant they did any more work is open to debate. I think this was part of the lab culture, but as a JSPS research fellow and a foreigner, I didn't feel any great pressure to follow suit. With very little knowledge of Japanese, it was sometimes difficult to communicate in the lab. Language wasn't a big problem, though: there were six other foreigners besides me in the lab, so English was often used; and the lab's weekly meeting took place in English as well.

That leads me on to daily life in Japan: If there is one single piece of advice I can give to improve your time in Japan, it is to learn some Japanese. Learn as much as you can before you arrive and keep learning while you're here. Not only does it help in everyday situations like the supermarket, but it also makes one feel more involved and connected with everyday life. The second piece of advice I have is to travel as much as you can! Japan is a big - at the very least a long! - country and has so much to offer. Some of my fondest memories of Japan of my travels and of the friendly people that I encountered on them.

I had a wonderful ten months in Japan, and I can very emphatically recommend going there on a JSPS fellowship. Life is not always easy, but it is certainly very interesting, and in my opinion the opportunity to pursue with such freedom - and with such ample support - one's research interests, and to make lasting collaborations with researchers in Japan while doing so, is fantastic.



With some of my lab mates at Keio University



After talking about my research to high school students in Shizuoka
(as part of the JSPS Science Dialogue programme)