

Fellow's experience- Professor Damian M. Bailey

This is my fourth time in Japan but first as a Japan Society for the Promotion of Science (JSPS) Fellow hosted by Prof. S. Ogoh and his team in the Department of Biomedical Engineering, Toyo University. As exercise neuroscientists, we share a collective interest in the mechanisms that control blood flow to the ageing human brain. During my fellowship, we have performed 'shared' experiments both in Toyo and in my laboratory in the UK to determine how exercise alters the way a person thinks, concentrates, formulates ideas, reasons and remembers (cognition) with a specific focus on free radicals (invisible molecules in the circulation) and how they control the delivery of oxygen and glucose to the brain. This is especially important since long-term exercise may improve cognition given its ability to decrease free radicals preventing blood vessels that supply the brain from fully opening up (endothelial dysfunction). We think that fewer free radicals and improved endothelial function can turn back the brain's 'hands-of-time' and make it function as if it were younger, helping delay or even prevent the ravages of dementia.

The JSPS fellowship has afforded me the opportunity to meet with other world-leading Japanese scientists with similar interests to share ideas and extend further collaborative links. In addition to Toyo University researchers, I have met and/or given formal presentations to groups from The National Institute of Advanced Industrial Science and Technology) in Tsukuba city (Profs. J. Sugawara and T. Tarumi) Osaka Sangyo University, Oaka (Prof. T. Miyamoto), Nara Women's University, Nara (Prof. M. Shibasaki), Ritsumeikan University, Kyoto (Prof. T. Hashimoto), Nagoya University (Prof. K. Katayama) and The University of Electro-Communications in Tokyo (Prof. Soichi Ando). These meetings have exposed me to different ways of thinking and introduced me to complementary experimental techniques that can further our collective understanding of the neuroprotective benefits of physical activity. As the phrase goes, 'actions speak louder than words' and these activities will no doubt culminate in more collaborative publications, international grant applications and postgraduate student exchanges to further extend our current work. After all, these are the 'currencies of success' against which academics are measured and weighed!

In addition to hard work, prospective fellows should also take advantage of the sightseeing opportunities and explore this fascinating country, defined by a multifaceted mix of cultural extremes ranging from the ancient to the technologically cutting-edge modern. I have found the Japanese to be an incredibly proud, loyal, respectful and industrious race with whom you can form

long-lasting relationships, equally curious to learn about your culture. Do your best to learn some basic Japanese, it will be much appreciated, but be reassured that the Japanese command of the English language is for the most part, sound. In closing, this fellowship has proven to be a truly memorable and productive experience that has served as a catalyst to further extend my collaborations with world-leading Japanese scientists.



Members of Professor Katayama's lab,