Psychology doctoral student Megan Mahoney awarded Alexander Graham Bell Canada Graduate Scholarship

April 2012

Megan Mahoney, a doctoral student in the Department of Psychology, was recently awarded an Alexander Graham Bell Canada Graduate Scholarships (CGS), which provides financial support to high caliber scholars in natural sciences or engineering. A limited number of these scholarships are awarded each year to the top-ranked applicants in the NSERC pool. Megan will receive $70,000 over the next two years to complete her doctoral research which examines the biological underpinnings of impulsive behaviour and how these contribute to addiction.

To conduct her work, Megan recently spent a year at the Institute of Genetics and Cellular and Molecular Biology (IGBMC) in Strasbourg, France. The IGBMC is one of the largest research institutes in France, housing up to 400 full-time scientists. As Megan noted: “Working at the IGBMC was an amazing experience because I was part of a large team in which each scientist brought a different skill set and perspective. We were all interested in the neurobiology of reward and addiction but how we approached this topic varied dramatically. The projects I worked on combined pharmacology, molecular biology, cellular imaging, and behaviour.”

While in France, Megan designed and implemented a new behavioural task that is now being used to test cognitive processes in genetically-modified mice. She also worked with a completely novel strain of conditional knockout mice (these animals lack a specific receptor in a circumscribed brain region) to test her ideas about reward and impulsivity. The function of the absent receptor is completely unknown and Megan’s work helped to clarify how its activation may play a role in conditions such as ADHD or schizophrenia.

According to her supervisor, Cella Olmstead, Megan’s work is innovative both in terms of techniques and theories. “One of her real strengths is integrating information from different sources without getting lost in the details. Megan is now familiar with hundreds of gene expression studies but she is always trying to relate these data back to her own ideas. Her most recent studies show that apparently simple responses are controlled by different neurochemical systems, depending on what animals expect to happen during testing.”

“I’m excited to take what I learned in France and apply it to the next stage of my research” explained Megan. “Not only did I have the opportunity to learn molecular biology techniques, but I can now think critically about research that uses these methods. That was one of the best parts of the whole experience…. and living in France was not so bad either.”