Dr. James Reynolds

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Research Story

In 2005, Dr. James Reynolds, Professor in the Department of Biomedical and Molecular Sciences at Queen’s University in Kingston, sought to establish a clinical research program for his ongoing interest and involvement with Fetal Alcohol Spectrum Disorder (FASD). Ideally, a hospital environment was thought to be more conducive to research into this disorder, because families would feel more comfortable than in a university setting, particularly if they were already familiar with the hospital itself. Hotel Dieu Hospital in Kingston offered a set of two offices to Dr. Reynolds. One of these offices was optimal space for a laboratory, which he readily established. In line with the hospital’s focus on patient-centered care, a comfortable wait room was available close to his offices for families who came to be part of his research. Many families were already familiar with Hotel Dieu Hospital through their involvement with its Child Development Centre, and other pediatric ambulatory care which has been a long tradition at the hospital.

Dr. Reynolds’ goal of translating his findings into practice has led him to collaborate with research centres across Canada, including the Children’s Hospital of Eastern Ontario (CHEO) in Ottawa, University of Manitoba in Winnipeg, The University of British Columbia in Vancouver, the Glenrose Rehabilitation Hospital and the University of Alberta in Edmonton, in addition to Hotel Dieu Hospital and Queen’s University in Kingston. This nationwide collaboration is entitled Fetal Alcohol Spectrum Disorder: Gene-environment interactions, predictive biomarkers, and the relationship between structural alterations in the brain and functional outcomes. “Our experience at Hotel Dieu taught us that we could move the research program out of the university, and into more community-based settings”, says Dr. Reynolds. “We’ve had research teams go to Sioux Lookout and Kenora in northern Ontario, and Cold Lake in northern Alberta, and engaged those communities in our research program.”

The collaboration with multiple centres across Canada is leading to a better understanding of FASD, with the goal of allowing FASD to be more efficiently defined, diagnosed and differentiated from other disorders (such as Attention Deficit Hyperactivity Disorder and Autism), through methods such as brain imaging and tracking eye movement control developed by Dr. Reynolds and his colleagues. It has also led to an understanding of FASD as a structural and functional brain injury rather than a behavioural or cognitive disorder, enabling more appropriate management tools. Additionally, the collaboration incorporates knowledge and skills from a spectrum of disciplines including neuroscience, psychology, engineering, social work, genetics and medicine, ultimately improving the ability of health care workers to effectively help FASD families.

Dr. Reynolds’ involvement with research and families living with FASD includes his position as the FASD Project Lead for NeuroDevNet, a Network of Centres of Excellence dedicated to research on children’s
brain health, and current President of the FASD Study Group, an international organization affiliated with the Research Society on Alcoholism, as well as local organizations such as the FASD Action Network and Community Living Kingston, which will soon present a play with the theme of FASD, leading to direct knowledge translation of his research to the community.

Dr. Reynolds’ research collaborations have resulted in numerous peer-reviewed publications including:


