

ACE NeuroImaging Laboratory



Principal Investigator

Alan C. Evans, Ph.D.

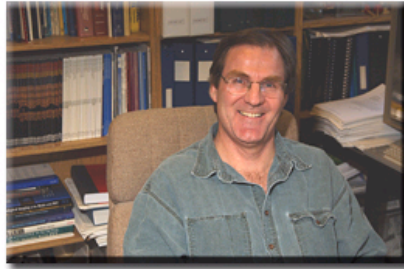
Principal investigator

Professor, departments of:

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[Biomedical Engineering](#)

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Professor Alan Evans was originally trained in physics at Liverpool University in the U.K. He completed his PhD in biophysics, studying the 3D folding patterns of protein structure and the binding of co-factors and substrates to enzymes. He then spent 5-year at Atomic Energy of Canada Ltd. in Ottawa, working on the physics and biochemical analysis of positron emission tomography (PET) data.

In 1984, he moved to the Montreal Neurological Institute (MNI) at McGill University in Montreal to continue his PET research. His research interests include multi-modal brain imaging with PET and MRI, image processing and large-scale brain database analysis.

He has published over 300 peer-reviewed papers and holds numerous NIH and CIHR grants. During his 25 years at the MNI, he has held numerous leadership roles, most notably as director of the McConnell Brain Imaging Centre (BIC) during the 1990's. Dr. Evans is a founding member of the International Consortium for Brain Mapping (ICBM). He was one of the founders of the Organization for Human Brain Mapping (OHBM), serving in numerous positions on the OHBM Council since 1995. He chaired the 4th International Conference on Human Brain Mapping in 1998. He is a regular participant in numerous NIH workshops, panels and initiatives related to brain imaging research. He is on the scientific advisory board of numerous research programs in this field. In 2003 he received a prestigious Senior Scientist Award from the Canadian Institutes of Health Research.

He is currently the director of the Montreal Consortium for Brain Imaging Research (MCBIR), a \$35M multi-center initiative to network the BIC with 6 other institutions engaged in research in psychiatry, neurology, development and aging, cognitive neuroscience, brain development and drug addiction and large-scale brain data processing. MCBIR provides the BIC with state-of-the-art equipment for human (MRI/PET/MEG) and animal (MRI/PET) studies as well as extensive computational resources.

Dr. Evans heads the data coordinating center for two large NIH-funded multi-center MRI study of normal pediatric development and research of Autism in infants. These projects provide a web-accessible reference database of normal and autistic maturation, both neuroanatomical and behavioral, for studies of normal and abnormal brain development. The methodologies developed for those projects, most notably (i) the web-based imaging/behavioral database, (ii) the automated MRI segmentation pipeline, and (iii) the brain-behavior correlation analysis for voxel-based (volumetric) or vertex-based (surface) data, are being used in a series of international collaborations on abnormal pediatric development and Alzheimer's disease.

In 2008 and 2009 he was awarded the CBRAIN and GBRAIN projects by CANARIE Inc. The main goal of these projects is to develop a platform for distributed processing and exchange of 3D/4D brain imaging data. The expected result is a middleware platform that will render the processing environment (hardware, operating system etc.) transparent to a remote user such that it will be possible to apply complex algorithm "pipelines" to large databases stored at remote locations and visualize the results as 3D maps in real time. The platform will be generalizable to different imaging domains (radiology, surgical planning) and organs (brain, heart) with profound consequences for Canadian and international medical research.

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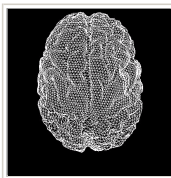
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