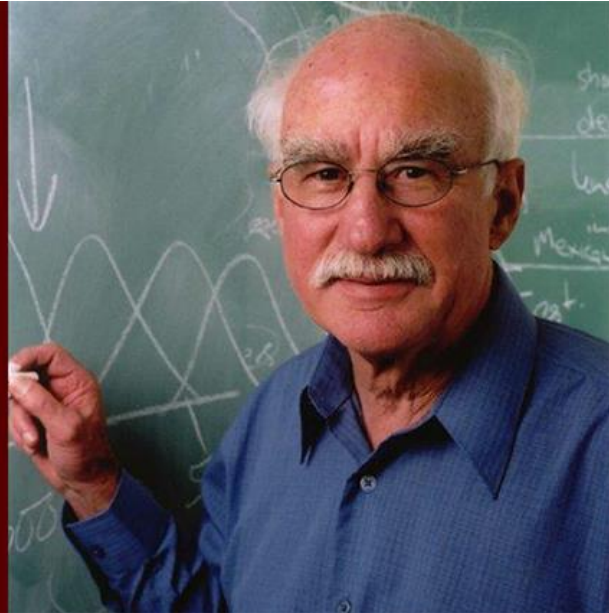


Queen's University

Department of Psychology

remembers

Dr. Barrie J. Frost



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Monday November 12, 2018
Queen's Psychology

Barrie J. Frost, MA, PhD, LLD (h.c.), FRSC, FAAAS, FCPA, and Emeritus Professor in Psychology at Queen's University in Kingston, Ontario, died peacefully on October 4th 2018 at the age of 79 after a courageous battle with cancer. His wife Ginny and his sons, Andrew, Tim, and Hugh were with him.

Barrie was born in Nelson, New Zealand. There, he grew up roaming the steep hills that connect the mountain range in the north with the fjords and deep waters that characterize the coast of his Southern Island hometown. He completed his teacher's certificate in Christchurch, NZ, in 1959, followed by a BA in 1961, and an MA in 1964, both at the University of Canterbury, NZ. Barrie then moved to Sydney, Australia, as a lecturer at the University of Sydney before coming to Canada where he completed his PhD at Dalhousie University under the supervision of W. K. Honig in 1967. He then joined Gerald Westheimer's laboratory at the University of California in Berkeley as a postdoctoral fellow. Barrie Frost was appointed at Queen's University in 1969 and remained one of its most luminous and inspiring members for almost half a century.

Barrie spent his lifetime as a pioneer in many fields of neuroscience research. He published over 100 articles in scientific journals and lived an illustrious career that was recognized internationally through many awards and fellowships. These included the Rutherford Scholarship of the Royal Society of London, the James McKeen Cattell Award of the Association for Psychological Science, the Donald O. Hebb Distinguished Contribution Award of the Canadian Society for Brain, Behaviour and Cognitive Science, the Queen's University Prize for Excellence in Research, the NSERC Award of Excellence, and the Alexander von Humboldt Research Prize. Barrie was also a Fellow of the Royal Society of Canada, the Canadian Institute for Advanced Research, and the American Association for the Advancement of Science. He held an honorary degree from Concordia University and received the Queen's Alumni Prize for Teaching Excellence.

Barrie's main interest was in understanding the physiology and function of visual systems. As a postdoctoral fellow, he worked on systems as diverse as eye movements in the water flea *Daphnia pulex*, single cell electrophysiology in the retina and tectum of amphibia, and rod-cone interactions in the human visual system. As a young professor in the departments of Psychology and Biology, Barrie taught generations of students and worked on a diverse portfolio of questions, methods and organisms. Students remember him for his contagious

enthusiasm. He was able to open their eyes to the curiosities of nature, the odd twists that evolution sometime takes, and the sophisticated interconnections and dependencies between organisms. Barrie was also a valued and respected mentor to his junior colleagues. His door was always open and he was never too busy to provide support and advice, often peppered with animated anecdotes of his own adventures.

Barrie's research remained immensely diverse. Over his career, he worked on sensory systems in many different bird species, but also in invertebrates and mammals, including humans. He published research on depth perception in owls, optic flow computation in pigeons, and self-motion perception in humans to name just a few of his many contributions to vision science. He was also interested in tactile perception and hearing. One of his many projects involved the creation of the "tactile vocoder", a device that translates sound into a pattern of tactile sensations that could be used by profoundly deaf people to experience sound, including spoken language.

In 2004, when Barrie turned 65, he retired from administrative and teaching duties at the university and became an emeritus professor. On the research side, however, he continued to be as active as ever. Research projects he conducted during this part of his career included studies of the migratory behaviour of the monarch butterfly, mechanisms of magnetoreception in birds, and navigation strategies in night-migrating moths. It was only in March of this year that Barrie Frost returned from his last field trip. Together with an international group of colleagues, he had been studying the spectacular ability of the night-migrating Bogong moth to find its way, 1000 km from the hot and dry spring conditions of southeast Australia, to a small number of cool caves in the Australian Alps, where they can survive the summer. His last publication appeared in July 2018 and made the front cover of the prestigious journal *Current Biology*. Here, Barrie and his colleagues showed that Bogong moths can sense the Earth's magnetic field and use it in conjunction with visual landmarks to steer migratory flight behaviour.

Barrie was not only an acclaimed scientist and educator, but he was an incredible husband, father, and grandfather. He delighted in his family and friends and enjoyed sharing his love of discovery with everyone. He was a gifted storyteller, sage advisor, and trusted friend. Those who were fortunate to know him will never forget him.

Friends and family gathered at a Celebration of Barrie's Life held at the University Club of Queen's University on November 11. In remembrance, donations may be made to the University Hospitals Kingston Foundation, directed to either The Cancer Center of South Eastern Ontario or to Palliative Care at Providence Care Hospital, or to the charity of your choice.