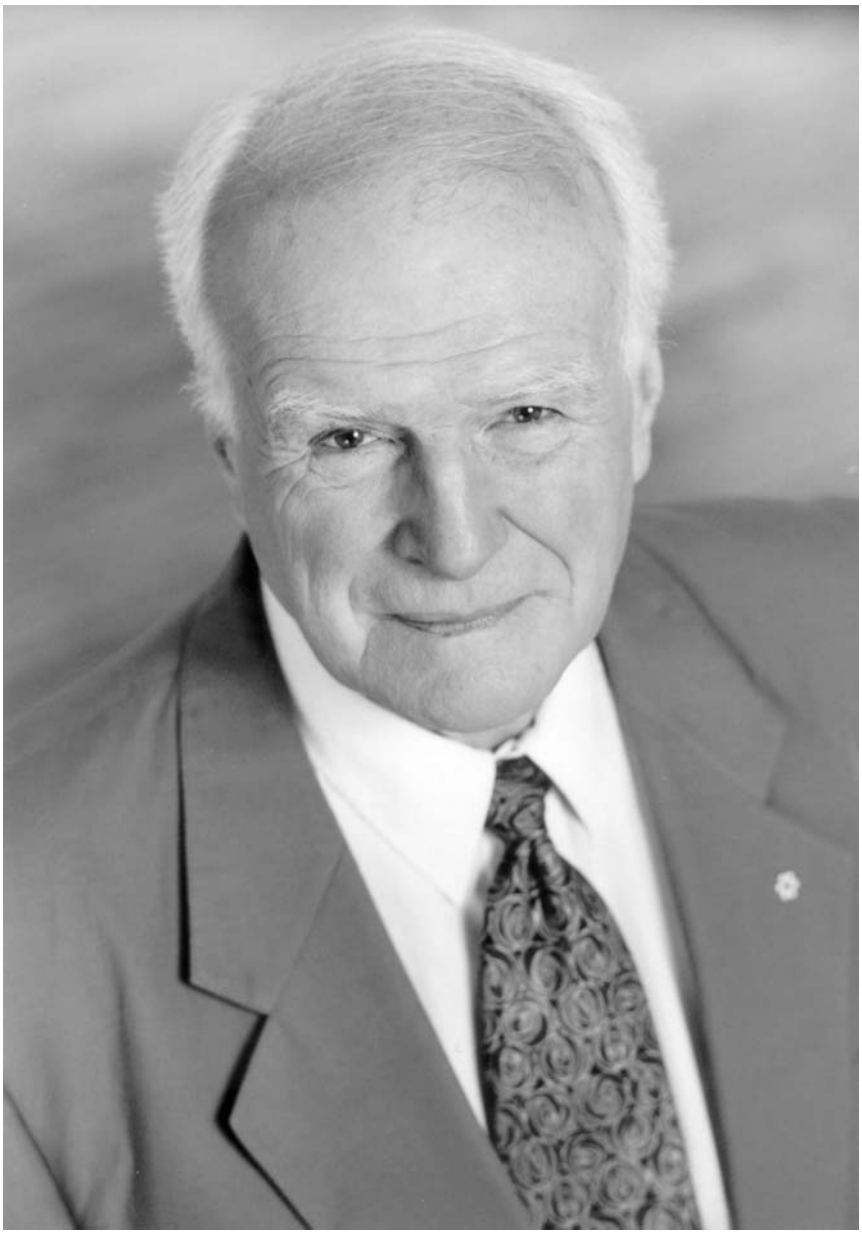
MARIAN A. PACKHAM, FRSC

James Fraser Mustard
1927-2011



James Fraser Mustard, a truly remarkable Canadian, excelled in all his diverse careers to which he applied outstanding leadership and networking abilities, insatiable appetite for new knowledge, extraordinary energy, imagination, optimism, and enthusiasm. He thrived on challenges.

Born in Toronto on 16 October, 1927, Fraser attended Whitney Public School, the University of Toronto Schools (graduating with the Nesbitt Silver Medal) and the University of Toronto where he received his MD in 1953 with several prizes including the Cody Silver Medal. At university he was the Canadian all-star tackle on the football team, nicknamed "Moose", and was awarded the Johnny Copp Memorial Trophy. In 1952 he married Christine Elizabeth (Betty) Sifton and the following year they went to Cambridge where he completed his PhD in 1956. His studies there focused on blood platelets and upon returning to Toronto he set up research groups, including one at the Ontario Veterinary College at Guelph, to continue the study of platelets and their role in the thromboembolic complications of atherosclerosis. He was the main initiator of the Blood and Vascular Disease Research Unit at the University of Toronto where early studies of the inhibitory effect of aspirin on platelet function were done. Fraser became an international authority in his field, was awarded the Gairdner Foundation International Award in 1967, and the Robert P. Grant Medal of the International Society on Thrombosis and Haemostasis in1987.

Fraser's next (and overlapping) career began in 1966 when he became one of the founders of the innovative medical school at McMaster University in Hamilton. Here he took part in the introduction of problem-based learning, a new concept at that time. At McMaster he was Chair of Pathology (1966-1972) and then Dean and Vice President of Health Sciences for 10 years. In both Toronto and Hamilton, Fraser's laboratory attracted trainees and scientists from across the globe, many of whom he and Betty and their family entertained on weekends at their farm near Mount Forest, Ontario. Some of the activities in which the visitors took part included making maple syrup, cross country skiing, and downhill skiing at Beaver Valley.

In 1982 Fraser began a challenging new career as the Founding President of the Canadian Institute for Advanced Research (now CIFAR). For 14 action packed years he worked tirelessly to create (and raise funds for) an intellectually elitist "institute without walls" that brought together the brightest minds he could find to pursue high-quality interdisciplinary research. As a determined champion of innovation, he established programs in such diverse fields as Artificial Intelligence and Robotics, Cosmology, Evolutionary Biology, Population Health, Superconductivity, Earth System Evolution, Economic Growth and Policy, Soft Surfaces and Interfaces, and Human Development. Members of these programs were inspired by Fraser's leadership, knowledge of the diverse subjects, and encouragement as he established the networks that were vital to the functioning of the programs and of CIFAR. One of the outcomes of the

Artificial Intelligence and Robotics Program was the formation of PRECARN, the highly successful Pre-Competitive Applied Research Network. The Population Health Program led to the establishment of the Manitoba Centre for Health Policy in 1991; Fraser provided strong support for this initiative and served on its Advisory Board.

Fraser began another career in 1996 when he set up the Founders' Network in a large office in a refurbished tin factory at 401 Richmond St. in Toronto. Here he transferred what he had learned through the Population Health Program, the Human Development Program, and the new Experience-based Brain and Biological Development Program of CIFAR (with which he remained associated) to create national and international networks centred on early childhood development. Fraser focused his attention on how the brain develops during the early years of a child's life, and how experiences in those years shape health, behaviour, and competencies in later life. In Canada he carried this message to every province and many aboriginal communities. Fraser set up the Council for Early Child Development and was instrumental in developing Toronto's Beatrice House for homeless mothers and their children. In 1999 he co-authored the influential monograph commissioned by the Premier of Ontario "The Early Years Study: Reversing the Real Brain Drain". A third monograph on this topic by the authors was launched a few days after Fraser's death. One of Fraser's final enthusiasms was promoting the establishment of a cross-disciplinary Institute for Human Development at the University of Toronto.

Several visits to Australia culminated in 13 weeks in 2006-2007 with Fraser as the "Thinker in Residence" of the government of South Australia for which he prepared a lengthy report of his recommendations concerning investing in Early Child Development. The same theme was emphasized during visits to the USA, Mexico, Cuba, Pakistan, Chile, Brazil, Colombia, Jamaica, Turkey, and China. He had extensive interactions with members of The World Bank and of the Brookings Institution in Washington in which the discussions centred on ways to enhance early child development in the developing world. Fraser was credited by the billionaire philanthropist, George Soros, with having had a major influence on his initiation in 1994 of the Step by Step program that was operating in 30 countries by 2004.

The number and scope of Fraser's concurrent activities attest to his boundless energy and unique abilities. Beginning in 1966, he was a member or Chair of 22 provincial government councils, advisory bodies, or committees. So many of them were concerned with matters of health that a Queen's Park observer commented that "Fraser Mustard has become the ad hoc unofficial deputy minister of health planning". For six years he chaired the Ministry of Labour's Advisory Council on Occupational Health and Occupational Safety, leading to the creation of the Institute for Work and Health in 1994. Fraser also worked to develop the proposal for a network of Centres of Excellence in Ontario Universities. He was a member of the Royal Commission on Matters of Health and Safety Arising from the use of Asbestos in Ontario, and a member of the Bovey Commission to Study Future Development of the Universities of Ontario.

Federally, Fraser was a member or Chair of 12 government bodies, including the National Advisory Board for Science and Technology (NABST), the Protein Engineering Networks of Centres of Excellence (PENCE), the Atomic Energy of Canada Research and Development Advisory Committee, and the Social Sciences and Humanities Research Council of Canada (SSHRC).

Fraser's involvement in the Aga Khan University in Karachi, Pakistan, began in 1979. In 1985 he became a founding member of its Board of Directors and devoted a sizable share of his time to it for the rest of his life. He was a member of the board of the Steel Company of Canada (1986-1998) and of Ballard Power Systems (1995-2001).

In 1976 Fraser became a Fellow of the Royal Society of Canada and in 1993 he received its Sir John William Dawson Medal, one of his 29 major awards. These awards included Officer of the Order of Canada (1986), the Canada Council Izaak Walton Killam Memorial Prize in Medicine (1987), the J. Allyn Taylor International Prize in Medicine (1988), the Order of Ontario (1992), the Royal Bank Award (1993), Companion of the Order of Canada (1994), the F.N.G. Starr Award of the Canadian Medical Association (2001) and the Canadian Medical Hall of Fame (2003). In 2006 he was recognized as one of the "Giants of Biomedical Science" at the opening of the Terrence Donnelly Centre for Cellular and Biomedical Research at the University of Toronto. Fraser received 23 Honorary Degrees and took part in 25 Named Lectureships and Visiting Professorships. He belonged to 14 scientific societies and was president of three of them – the Canadian Society for Clinical Investigation, the American Society of Hematology, and the International Society on Thrombosis and Haemostasis. He authored or co-authored more than 500 publications.

Fraser's rich life of accomplishments ended on 16 November, 2011. He was predeceased by his wife Betty and survived by six children and nine grandchildren.

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(Author's title given as of the time of writing)