

Two prominent IEEE Canada members appointed to the Order of Canada

Announced on December 30, 2016, the appointment of Dr. John Bandler as an Officer recognizes “his scientific contributions that have helped to position Canada at the forefront of microwave engineering.” Leonard Bateman’s many contributions are summarized as “advancing the development and distribution of hydroelectric power, notably as the former head of Manitoba Hydro.”

Dr. John Bandler Officer (O.C.)



His Excellency presents the Officer insignia of the Order of Canada to John Bandler, O.C.



Dr. John Bandler is Professor Emeritus in the Department of Electrical and Computer Engineering at McMaster University’s Faculty of Engineering. He was President of Optimization Systems Associates Inc., which he founded in 1983, until 1997 when it was acquired by Hewlett-Packard Company. He is President of Bandler Corporation,

which he founded in 1997. His record spans more than 50 years of scholarly, pioneering and professional contributions in radio frequency and microwave theory and techniques, optimization of circuits and systems, and computer-aided engineering (more than 500 papers). He studied at Imperial College of Science and Technology and received his degrees from the University of London.

Based on Dr. Bandler’s work, advances such as design with tolerances, yield-driven design, and electromagnetic optimization—once academic fantasies—are now taken for granted by microwave engineers. His implementations into major commercial design tools have impacted high-frequency and microwave design initiatives world-wide.

Dr. Bandler has received numerous awards and recognitions from IEEE for his achievements. He was elected IEEE Fellow in 1978 for “contributions to computer-oriented microwave and circuit practices.” In 2004, he was honoured with the IEEE Microwave Theory and Techniques Society’s (MTT-S) Application Award for “implementation of optimization tech-

Leonard Bateman Member (M.C.)



The Governor General presents the Member insignia of the Order of Canada to Leonard A. Bateman, C.M., O.M.



Leonard Bateman’s appointment as Member to the Order of Canada comes just two years after his receipt of the Julian C. Smith Medal from the Engineering Institute of Canada, having been nominated by IEEE Canada. The award recognizes “Achievement in the Development of Canada.” IEEE Winnipeg Section members and others familiar with Mr. Bateman’s

36 years with electric utilities in Manitoba, and his subsequent consulting career and volunteer service to the profession, will not be surprised by this most recent honour.

Mr. Bateman is given much of the credit for completion of a series of dams and hydroelectric power plants on the Nelson River in Northern Manitoba, together with the long-distance DC transmission lines connecting them to load centres in the south of the province. DC lines of this kind had never been installed before in Canada. When the first of these lines became operational in 1972, then known as the Nelson River Bipole system, they were the longest and highest-voltage (+/- 500 kV) direct current lines in the world.

Mr. Bateman began his career working with Winnipeg Hydro in 1942 after graduating with a B.Sc. in electrical engineering from the University of Manitoba. He completed his M.Sc. in 1948. Leaving Winnipeg Hydro in 1956, he joined what was then called the Manitoba Hydro Electric Board as a Systems Planning Engineer. After the amalgamation of this organization with the Manitoba Power Commission in 1961, he was appointed Director



Dr. Bandler receiving the 2012 IEEE Canada McNaughton Gold Medal. Beside him is IEEE Canada Awards & Recognition Committee Chair 2010-2012, Dr. Hussein Mouftah.

technical contributions in the field of microwave theory and techniques.”

Many other accolades have been conferred upon Dr. Bandler by both the engineering profession and Canada. He was elected Fellow of the Royal Society of Canada, Academy of Science, in 1986 and the Canadian Academy of Engineering in 2003. In 1977, Dr. Bandler was a guest of Her Majesty the Queen and His Royal Highness the Duke of Edinburgh in Ottawa upon the occasion of the Queen’s Silver Jubilee; young Canadians achieving excellence in the Arts and Sciences were honoured at a dinner and reception. He was further honoured by her Majesty in 2012 as a recipient of the Queen’s Diamond Jubilee Medal.

One of Dr. Bandler’s most notable achievements is his discovery of space mapping methodology, which speeds up model generation and design optimization of a system. From automotive crashworthiness to magnetic systems, his concept has been adopted into design portfolios across the entire spectrum of engineering, making possible the high-fidelity design of devices and systems at a cost of only a few high-fidelity simulations. In an article entitled “Have You Ever Wondered About the Engineer’s Mysterious ‘Feel’ for a Problem?” published in the Summer 2013 issue of the *IEEE Canadian Review* he explains the discovery and gives examples of its application.

In recent years, Dr. Bandler has become a highly sought after keynote speaker and workshop presenter. He has lectured on the creative process to audiences all across North America, mainland China and in Hong Kong. He also regularly offers workshops and mentoring in presentation skills across North America. He is one of the organizers of a Three Minute Thesis (3MT®) Competition for the 2017 IEEE MTT-S International Microwave Symposium (IMS) in Hawaii, open to students and young professionals.

nology, design with tolerance and yield driven design to microwave devices, circuits and systems.” He is the 2012 recipient of IEEE Canada’s A.G.L. McNaughton Gold Medal for “pioneering contributions to optimization technology and microwave CAD.” In 2013 he was recognized by IEEE MTT-S with its Microwave Career Award for that year, for “a career of leadership, meritorious achievement, creativity and outstanding



Leonard Bateman in 1973 in front of a display of the first Nelson River HVDC line, known as Bipole 1. The occasion was the official opening of Bipole 1 and the Kettle Rapids generating station.

Winnipeg Regulation project, the Churchill River Diversion project and the second phase of the Nelson River D.C. Transmission project (Bipole II). He also oversaw an interconnection with Minnesota Light and Power in 1976, and negotiated an agreement with Northern States Power for interconnection at 500 kV. Upon leaving Manitoba Hydro he founded Bateman and Associates, a consulting company.

Mr. Bateman’s legacy at Manitoba Hydro includes a provincial carbon-emission- to-GDP ratio under the national average, even though its climate is one of the harshest in the country. This is due to his choice of developing Manitoba’s hydroelectric resources over coal-fired thermal generation. The interconnections he oversaw with utilities in the United States have brought ongoing revenue to Manitoba, while also providing service backup. For more details, see “A History of Electric Power Development in Manitoba,” by Mr. Bateman, published in the Winter 2005 issue of the *IEEE Canadian Review*.

Mr. Bateman was President and/or Vice-President of several professional organizations, including The Canadian Nuclear Association, The Canadian Electricity Association, and The Association of Professional Engineers of Manitoba. He was the founding President of the Canadian Society for Senior Engineers, a member society of the Engineering Institute of Canada. He is a recipient of The Canadian Council of Professional Engineers’ (now Engineers Canada) Gold Medal, the Queen’s Silver, Golden and Diamond Jubilee medals, and in 2003 was invested into the Order of Manitoba. He turns 98 in 2017. ■

Photo: Jeff Debooy, Winnipeg Tribune