

Francis Clarke: Short Biography

Francis Clarke was born in 1948 in Montréal. His PhD is from the University of Washington (1973), where he wrote his thesis under the supervision of R. T. Rockafellar. He became full professor at the University of British Columbia in 1978.

In 1984 he was named director of CRM (Centre de Recherches Mathématiques) at l'Université de Montréal. During his nine-year tenure, CRM evolved into Canada's first national research center for mathematics and its applications. Clarke was also founding director of Qubec's ISM (Institut des Sciences Mathématiques), a mathematics institute spanning Montréal's four universities.

He is now a faculty member at l'Université de Lyon, in l'Institut Camille Jordan, and also holds a chair in mathematical control theory at l'Institut universitaire de France.

Francis Clarke's research interests lie in nonsmooth analysis (a term he coined), optimization, differential equations, control theory, and the calculus of variations, as well as modeling in various interdisciplinary areas. His contributions have involved the development of nonsmooth calculus, its applications to dynamic optimization, regularity and existence theory in the calculus of variations, Hamiltonian mechanics, generalized solutions of the Hamilton-Jacobi equation, and feedback control synthesis.

Francis Clarke is the author of the book *Optimization and Nonsmooth Analysis* (Wiley 1983, now in SIAM's Classics in Applied Mathematics series), which has been translated into Russian, as well as over 150 journal articles. A Fellow of the Royal Society of Canada, he has received the Coxeter-James and the Archambault research prizes, and a Killam Fellowship. In 2007 he was promoted to the rank of *Officier*, Ordre des palmes académiques (France).

He has been a featured speaker at the International Congress of Mathematicians (1978), plenary speaker at the Conference on Decision and Control (1991), the European Control Conference (2001), and the International Symposium on Mathematical Programming (2003), and keynote speaker at the Congress of Non-linear Analysts (1996). In 2004 he was president of the scientific committee for the first joint meeting of the six mathematical societies of Canada and France. A conference on "Nonsmooth Analysis, Control Theory and Differential Equations" in honor of his sixtieth birthday was held in Rome in 2009.