

	<p>Roland List</p> <p>FRSC</p>	<p>CANADA</p>
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Born 1929.

Dr. sc. Nat. (1960) & Dipl. phys. (1952), both ETH; Professor emeritus, University of Toronto (UT). 1994-; Professor, Department of Physics, UT 1963-1982, 1984-94; Deputy Secretary-General, WMO (UN), Geneva 1982-84; Head Hail Section, Swiss Federal Institute for Snow & Avalanche Research, 1952-63; Supervisor Student Restaurant ETH, 1949-1952; Visiting Professor ETH, Zurich 2x.

Associate Chairman, Dept. Physics, University of Toronto (UT); Board of Directors UCAR (NCAR); Founding Chair, WMO Executive Committee Panel on Weather Modification, 1969-82; Member US Space Shuttle Science Council 1978-81. Chair Italian Scientific Committee "Progetto Pioggia" 1989-1998; Chair AMS Committee on Advervent & Inadvervent Weather Modification; Overall Chair of 8 International WMO Weather and one Typhoon Modification Conferences, 1 Cloud Physics Conference (IAMAS), 1968; Responsible for 1 WMO Congress and 2 Executive Council meetings);

Within IUGG: Secretary-General, International Association of Meteorology and Atmospheric Sciences. IAMAS, 1995 – 2007; IUGG Representative with WMO and WCRP, 1995- 2007; Organizer of Joint IAMAS/IAPSO Conference, Melbourne, 1997 and IAMAS parts of IUGG Assemblies in Birmingham, UK, 1999, Sapporo, 2003 and Perugia 2007 and six biannual IAMAS General Assemblies.

SCIENTIFIC RESEARCH:

Over 250 publications on laboratory & field experiments, theory and applications in cloud physics and precipitation, Doppler radar operations in Canada and Malaysia, supervisor of 33 PhD and 47 MSc theses.

Special achievements: (i) Freely falling particles *gyrate* (proven by theory and experiment). (ii) the first complete theory of **Heat and Mass Transfer of spherical hailstones has been formulated (JAS, 2014, 71, 1508-1520 & 2114-2129)**. The collision, coalescence, collection and breakup processes of growing raindrops has been experimentally explored and parameterized. - Studies of warm rain and raindrop spectra evolution were done in Hawaii & Malaysia (2x), the Canadian Arctic, Newfoundland, Switzerland and USA, with disdrometers, PMS 2-dimensional grey-scale laser probes and Doppler radar,

Guidance of WMO and WMO Member Countries on the design, execution and evaluation of weather modification experiments, as Chair of the WMO Weather Modification Panel. In addition 34 related WMO Reports

Facilities built or used:

- (i) icing wind tunnels that reproduce hailstorm conditions;
- (ii) 'Free Fall Tower' to study behavior of freely falling particles],
- (iii) liquid tunnel to simulate heat and mass transfer by redox electrolysis;
- (iv) scanning infrared microscopes to image surface temperature and its changes during hailstone growth;
- (v) portable Doppler radar to study evolution of rain and hailstone spectra;
- (vi) Cold rooms to study crystallographic structure and air bubble arrangements in hailstones; etc.

Honors: Fellow Royal Society of Canada, Member Canadian Academy of Science, Honorary Member IUGG, Honorary Professor China Academy of Meteorological Sciences, Honorary Member International Commission on Cloud Physics, Trophy by IAMAS, Patterson Medal, Honors from Leningrad University, Thailand, and Spain, Fellow Roy. Meteor. (UK) and American Meteorological Society.

Advisor of UN, WMO, World Bank, UNDP, UNEP; Governments of CA, US, Italy, Malaysia, Thailand, Switzerland, Germany.