CONTRIBUTIONS BY CANADIANS TO NAMED THINGS IN CHEMISTRY AND PHYSICS

Department of Chemistry, York University
4700 Keele Street, Toronto, ONTARIO M3J 1P3, CANADA

For suggestions, corrections, additional information, and comments please send e-mails to c1000@careerchem.com

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Avery, Oswald Theodore	1877 - 1955	Canadian-American (b. Halifax, Nova Scotia, Canada)	DNA as source of heredity **(1944)**
Bader, Richard Frederick W.	1931 -	Canadian (b. Kitchener, Ontario, Canada)	Atoms in molecules (AIM) **(1981)**
Becke, Axel D.	1953 -	?	Density functional theory (DFT) **(1964)**, along with R.G. Parr, W. Kohn, W. Yang, C. Lee; B3LYP (Becke-Lee-Yang-Parr) method **(1988)**
Belleau, Bernard	1925 - 1989	Canadian (b. Montreal, Quebec, Canada)	Belleau's reagent **(1983)**
Boyd, Russell Jaye	1945 -	Canadian (b. Kelowna, British Columbia, Canada)	Boyd-Edgecombe electronegativity parameters **(1988)**
Brook, Adrian Gibbs	1924 -	Canadian (b. Toronto, Ontario, Canada)	Brook rearrangement **(1958)**
Brooks, Harriet	1876 - 1933	Canadian (b. Exeter, Ontario)	Transmutation of the elements **(1904)**
Cox, Robin	1943 -	British-Canadian (b. England)	Cox-Yates acidity function **(1978)**
Eadie, George Sharp	1895 - 1976	Canadian-American (b. Toronto, Ontario, Canada)	Eadie plot **(1942)**

Edgecombe, Kenneth E.	?	Canadian ?	Boyd-Edgecombe electronegativity parameters **(1988)**
Edward, John (Jack) Thomas	1919 - 1999	British-Canadian (b. London, England)	Edward-Lemieux effect (anomeric effect) **(1969)**
Giauque, William Francis **Chemistry Nobel 1949**	1895 - 1982	Canadian-American (b. Niagara Falls, Ontario)	Absolute zero temperature **(1927+)**, partition functions **(1930)**
Gillespie, Ronald G.	1924 -	British-Canadian (b. London, England)	Gillespie-Nyholm model **(1957)**, Valence shell electron pair repulsion theory (VSEPR) **(1963)**, magic or super acid **(1968)** (with G.A. Olah)
Good, Norman Everett	1917 -	Canadian-American (b. Brantford, Ontario, Canada)	Good buffer solutions **(1966)**
Hanes, Charles Samuel	1903 - 1993	Canadian (b. Toronto, Ontario, Canada)	Hanes plot, Hanes-Woolf plot **(1932)**
Kamen, Martin	1913 -	Canadian-American (b. Toronto, Ontario, Canada)	Discovery of carbon-14 isotope **(1941)**
Keyes, Frederick George	1885 - 1976	Canadian-American (b. Kingston, Ontario)	
Kresge, Alexander Jerry	1926 -	American-Canadian (b. Wilkes Barre, Pennsylvania, USA)	Fractionation factor theory **(1964)**, with V. Gold
Lalancette, Jean Marc	1934 -	Canadian (b. Drummondville, Quebec, Canada)	Lalancette reagent **(1972)**
Lemieux, Raymond Urgel	1920 - 2000	Canadian (b. Lac la Biche, Alberta, Canada)	Lemieux-Johnson reaction **(1956)**, Lemieux-Johnson reagent **(1956)** (sodium periodate-osmium tetroxide), Lemieux-von Rudloff reagent **(1955)** (sodium periodate-potassium permanganate), Edward-Lemieux effect (anomeric effect) **(1969)**
Lever, A. Barry P.	1936 -	British-Canadian (b. London, England)	Lever electrochemical parameters **(1990)**

Macdonald, Stewart Ferguson	1913 -	Canadian (b. Toronto, Ontario, Canada)	Macdonald coupling **(1952)**
Marcus, Rudolph Arthur **Nobel Prize Chemistry 1992**	1923 -	Canadian-American (b. Montreal, Canada)	RRKM theory **(1952)**, Marcus equation **(1956)**, BeMaHaPoThLe principle, Marcus-Hush relationship, Marcus inverted region
Menten, Maud Leonora	1879 - 1960	Canadian (b. Port Lambton, Ontario, Canada)	Michaelis-Menten kinetics **(1913)**
Moffatt, John Gilbert	1930 -	Canadian-American (b. Victoria, British Columbia, Canada)	Pfitzner-Moffatt reagent **(1963)** (dimethylsulfoxide-dicyclohexylcarbodiimide)
Patterson, Arthur Lindo	1902 - 1966	New Zealander-British (b. Nelson, New Zealand)	Patterson functions **(1934)**
Saunders, Frederick A.	1875 - 1963	Canadian (b. London, Ontario, Canada)	Russell-Saunders coupling **(1925)**
Siebrand, Willem	1932 -	Dutch-Canadian (b. Ijsselmuiden, Netherlands)	Albery-Siebrand model **(1986)**
Taube, Henry **Nobel Prize Chemistry 1983**	1915 -	Canadian-American (b. Neudorf, Saskatchewan)	Creutz-Taube complex, ion **(1969)**
Winstein, Saul	1912 - 1969	Canadian-American (b. Montreal, Quebec, Canada)	Anchimeric assistance **(1939)**; Normal salt effect **(1940)** with C.K. Ingold; Winstein equation; Grunwald-Winstein equation **(1948)**; intimate and solvent separated ion pairs **(1952)** with D.J. Cram; special salt effect **(1954)**; Winstein-Holness equation **(1955)**
Wolfe, Saul	1933 -	Canadian (b. Toronto, Ontario, Canada)	Gauche effect **(1972)**
Yates, Keith	1928 -	British-Canadian (b. Preston, England)	Cox-Yates acidity function **(1978)**
Zerner, Michael Charles	1940 - 2000	Canadian-American (b. Boston, Massachusetts, USA)	ZINDO program **(1991)**

Note:

Italicized names are those scientists that are still alive today.

Fischer, Hermann Otto Laurenz: Banting Institute, University of Toronto (1937 - 1948), synthesis of optically pure α-monoglycerides and α-glycerophosphoric acids; demonstrated action of lipase enzymes on above compounds.

Herman Francis Mark left I.G. Farbenindustrie in Germany (under Kurt H. Meyer) and worked for two years (1938 – 1940) as a Research Manager at International Paper Company, Hawkesbury, Ontario before taking up an academic position at Polytechnic Institute, Brooklyn, New York, USA.

Frederick Soddy worked at McGill University (1900 - 1903) with Ernest Rutherford. He came to Canada to increase his chances for a faculty position at the University of Toronto, however the University of Toronto was not interested in him.

Frederick Albert Saunders studied chemistry at the University of Toronto (1890's) then switched to physics.

Frederic Phillip Olsen was a professor at McMaster University, Hamilton, Ontario.

Donald Frank Stedman (Stedman columns) worked at the National Research Council in Ottawa (1930 - 1967)

Ernst Max von Rudloff (Lemieux-von Rudloff) is at the Prairie Research Labs of the NRC in Saskatoon.

The U.S. Pavilion at Expo 67 in Montreal was designed by Richard Buckminster Fuller. The geodesic dome design inspired Harold Kroto, Richard Smalley, and Robert Curl, Jr. to name the newest form of carbon, C60, buckminsterfullerene when it was discovered in 1985.

George Olah (Nobel Chemistry 1994) worked as a research scientist at Dow Chemical in Sarnia, Ontario (1957 - 1965).

Arthur L. Patterson did his Ph.D. at McGill in 1928 under the direction of Arthur S. Eve who was a former student of Ernest Rutherford. Rutherford had been a professor of experimental physics at McGill from 1898 to 1907. Eve was the official biographer of Rutherford and had published a book "Rutherford. Being the Life and Letters of the Rt. Hon. Lord Rutherford, O.M.", Cambridge University Press: Cambridge, 1939. Rutherford and Patterson were both New Zealanders born in Nelson, New Zealand.

References:

Absolute zero temperature

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Giauque, W.F.; Clark, C.W. *J. Am. Chem. Soc.* **1932**, 54, 3135
Giauque, W.F.; MacDougall, D.P. *Phys. Rev.* **1933**, 43, 768
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Giauque, W.F. *Ind. Eng. Chem.* **1936**, 28, 743

Albery-Siebrand model

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Siebrand, W.; Wildman, T.A., *Acc. Chem. Res*. **1986**, 19, 238

Anchimeric assistance (neighbouring group participation)

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Baird, R.; Winstein, S. *J. Am. Chem. Soc.* **1957**, 79, 756; 4238

Atoms in Molecules (AIM)

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Bell-Evans-Polanyi principle, Be(ll)-Ma(rcus)-Ha(mmond)-Po(lanyi)-Th(ornton)-Le(ffler) principle

Evans, M.G.; Polanyi, M., *Trans. Faraday Soc.* **1938**, 34, 11
Bell, R.P., *Proc. Roy. Soc. London Ser. A.,* **1936**, 154, 414

Thornton, E.R., *J. Am. Chem. Soc.* **1967**, 89, 2915

Belleau's reagent (2,4-bis(4-phenoxyphenyl)-1,3-dithia-2,4-diphosphetane-2,4-disulfide)

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Boyd-Edgecombe electronegativity parameters

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Brook rearrangement

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Concept of DNA as substance of heredity

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Cox-Yates acidity function

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Creutz-Taube complex, ion

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Discovery of carbon-14

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Eadie plot

Eadie, G.S., *J. Biol. Chem.* **1942**, 146, 85

Edward-Lemieux effect (anomeric effect)

Edward, J.T. *ACS Symp. Ser.* **1993**, 539, 1
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Fractionation factor theory

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Gauche effect

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Hanes-Woolf plot

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Lalancette reagent

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Lemieux-Johnson reaction

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Lemieux-Johnson reagent (sodium periodate - osmium tetroxide)

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Magic or super acid

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Marcus equation, Marcus inverted region

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ZINDO program

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