

## **GRAEME SPIERS, M.Sc., Ph.D**

### **EDUCATION**

1976	B.Sc. (Earth Science and Biology)	University of Waikato, Hamilton, New Zealand.
1982	M.Sc. (Mineralogy and Geochemistry)	University of Alberta, Edmonton, Alberta, Canada.
1990	Ph.D. (Mineralogy and Geochemistry)	University of Alberta Edmonton, Alberta, Canada.

### **POSITIONS HELD**

Current	Chair, Environmental Monitoring - Department of Chemistry and Department of Earth Sciences, Laurentian University
	Instructor - Soil Chemistry, Clay Mineralogy, Pedology, Environmental and Analytical Chemistry, Laurentian University
	Director, Centre for Environmental Monitoring, MIRARCO - Co-ordination of Environmental Research Program(s), Laurentian University
	Adjunct Faculty, Department of Land Resource Science, University of Guelph.
	Associated Graduate Faculty, Department of Biology, University of New Brunswick.
1998 – 1999	Department Head, Inorganic Analytical Services, Research and Productivity Council, Fredericton, New Brunswick.
1995 – 1998	Supervisor, Elemental Analysis and Operations, Ontario Geoscience Laboratories, Ontario Ministry of Northern Development and Mines.
1994	Laboratory Supervisor, Plains Innovative Laboratory Services, Saskatoon.

### **EXPERTISE**

- Technical expertise in Technology Transfer projects at Laurentian University in land reclamation, environmental chemistry, acid rock drainage.
- Provide direction for environmental research projects in land reclamation, environmental chemistry, acid rock drainage, environmental monitoring.
- Development of new analytical service lines in applied spectroscopy and inorganic analytical chemistry.
- Investigator and/or Co-investigator in soil science, applied spectroscopy, environmental, mineralogical and agricultural research projects.
- Preparation of petrographic sections, and Xray analysis of rock forming mineral separates.

### **PROFESSIONAL AFFILIATIONS**

American Chemical Society  
Spectroscopy Society of Canada  
New Zealand Society of Soil Science  
The Royal Society of New Zealand  
The Clay Minerals Society

Canadian Society of Soil Science  
Society for Applied Spectroscopy  
Soils Science Society of America  
The International Association of Geochemistry  
and Cosmochemistry

## SELECTED RECENT PUBLICATIONS

Sadiq, M., Lock, A., **Spiers, G.A.** and Pearson, D. (2002). Controls on barium speciation in Kelly Lake, Sudbury, Ontario. *Canadian Journal of Aquatic Science* (in press).

Sadiq, M., Lock, A., **Spiers, G.A.**, and Pearson, D. (2002). Controls on arsenic speciation in Kelly Lake, Sudbury, Ontario. *Water, Air and Soil Pollution* (in press).

McBride, M.B. and **Spiers, G.A.** (2001). Trace Elements Content of Selected Fertilizers and Dairy Manures by ICP-MS. *Communications in Soil Science and Plant Analysis*. 32: 139-156.

McBride, M.B., Richards, B.K., Steenhuis, T. and **Spiers, G.A.** (2000). Molybdenum Uptake By Forage Crops Grown On Sewage Sludge-Amended Soils In The Field And Greenhouse. *Journal of Environmental Quality*. 28: 848-854.

McBride, M.B. and **Spiers, G.A.** (2000). Trace Elements Content of Selected Fertilizers and Dairy Manures by ICP-MS. *Communications in Soil Science and Plant Analysis* (accepted).

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Gratton, W.S., Nkongolo, K.K. and **Spiers, G.A.** (2000). Heavy metal accumulation in soil and Jack Pine (*Pinus banksiana*) needles in Sudbury, Ontario, Canada. *Bulletin of Environmental Contamination and Toxicology* 64: 550 – 557.

McBride, M.B., Richards, B.K., Steenhuis, T. and **Spiers, G.A.** (1999). Long term leaching of trace elements in a heavily sludge-amended silty clay loam soil. *Soil Science* 164: 613-624.

Shelp, B.J., A.M. Kitheka, R.A. Vanderpool, O.R. Van Cauwenberghe and **G.A. Spiers.** (1998). Xylem-to-phloem transfer of boron in broccoli and lupin during early reproductive growth. *Physiologia Plantarum* 104: 533-540.

Karanassios, V., Drouin, P.J. and **Spiers, G.A.** (1998). Automated detection and interpretation of spectral information using cross-correlation, millilitre volumes, pneumatic nebulization sample introduction and inductively coupled plasma-atomic emission spectrometry with photodiode array detection. *Spectrochimica Acta* 53B: 1149-1166.

Marentes, E., Shelp, B.J., Vanderpool, R.A. and **Spiers, G.A.** (1997). Retranslocation of boron in broccoli and lupin during early reproductive growth. *Physiologia Plantarum* 100: 389-399.

**Spiers, G.A.**, McGeorge, S.W., (1996). Sensitivity enhancement with reduction of OH-band interferences for prominent ICP-AES analytes using ultrasonic nebulization and membrane desolvation. *Spectrochimica Acta B* (in review).

Hou, J., Evans, L.J. and **Spiers, G.A.** (1996). A chemical fractionation scheme for soil boron: I. Test of methodology on synthetic soils. *Canadian Journal of Soil Science* : (accepted).

Shelp, G., Chesworth, W. and **Spiers, G.A.** (1996). The amelioration of acid mine drainage by an in situ electrochemical method. II: Use of zinc and aluminum as the sacrificial anode. *Applied Geochemistry* 11: 425-432.