

📧 Dept. of Earth Sciences, Carleton U., Ottawa, ON, Canada K1S 5B6
☎ (613) 520-2600 x.4396
✉ claire.samson@carleton.ca
www.earthsci.carleton.ca/samson-lab

KEY EXPERTISE

- Program management
- Airborne geophysics and unmanned aerial vehicles
- 3D Laser imaging
- Meteoritics and planetary geology
- Robotics
- Magnetic and electromagnetic methods

EDUCATION

1986 – 1991 Ph.D. in Physics, University of Toronto, Toronto. Supervisor: G.F. West
Ph.D. Thesis: “Reprocessing and interpretation of GLIMPCE marine crustal reflection seismic data from Eastern Lake Superior”

1984 – 1985 M.Sc. in Geophysics, McGill University, Montreal. Supervisor: D.J. Crossley
M.Sc. Thesis: “Recording the Kapuskasing pilot reflection survey with refraction instruments: a feasibility study”

1979 – 1983 B.Sc.A. in Engineering Physics, Laval University, Quebec City

1981 – 1984 Certificate in Spanish Language, Laval University, Quebec City

Languages: French (mother tongue), English (excellent), Spanish (excellent), Dutch (intermediate)

ACADEMIC EXPERIENCE

Carleton University, Ottawa, Ontario
Professor, Department of Earth Sciences **2011 – Present**
Associate Professor, Department of Earth Sciences **2003 – 2011**

Queen’s University, Kingston, Ontario **2012 – Present**
Adjunct Professor, Department of Mining

Laurentian University, Sudbury, Ontario **2009 – 2012**
Adjunct Professor, Department of Earth Sciences

Academic leadership

- Associate Dean (Planning), Faculty of Graduate and Postdoctoral Affairs (2015-2018)
- Co-Director, Ottawa-Carleton Geoscience Centre (2013-2014)
- Chair, Department of Earth Sciences (2010-2013)
- Graduate advisor, Department of Earth Sciences (2006-2009)

Research

- Analogue studies for planetary exploration
 - Robotic mapping using exploration rovers
 - Electromagnetic sounding of shallow subsurface
- Geomaterial characterization using 3D laser imaging
 - Structural rock face analysis in underground mining
 - Measuring the physical properties of rare and fragile meteorites and tektites
- Geophysical applications of unmanned aerial vehicles (UAVs)
- Application of seismic methods to mineral exploration and CO₂ sequestration

Graduate supervision

- Theses (co-)supervised: 23 B.Sc., 18 M.Sc., 4 M.A.Sc., 1 M.C.S., 2 Ph.D. (4 M.Sc., 1 M.A.Sc., 3 Ph.D. in progress)
- Recipient of a 2012 Graduate Mentoring Award, Carleton University

Teaching

- Undergraduate: EARTH2404 Engineering geoscience, EARTH2415 Natural disasters, EARTH4804 Exploration geophysics, EARTH4807 Advanced field geology, EARTH4815 Natural hazards in Canada
- Graduate: EARTH5903 Field studies, EARTH5215-IPIS5520 Natural hazards in Canada: Risk and Impact
- Recipient of the 2014 Excellence in Teaching Award, Faculty of Science, Carleton University

INDUSTRIAL EXPERIENCE

NEPTEC Design Group, Kanata, Canada

2000 – 2003

Senior Engineering Analyst, Laser Camera System (LCS) Program

- Analyzed optical data from a ranging and imaging laser fitted on space shuttle Discovery during mission STS-105 to the International Space Station in August 2001
 - Built a 3D mathematical simulator of the LCS
 - Assessed LCS accuracy, precision, resolution and stability in laboratory and in-orbit conditions
 - Planned and supported the space mission from NASA Mission Control Center (Houston)
 - Enhanced 3D laser image data post-flight

Shell – Nederlandse Aardolie Maatschappij (NAM), Assen, The Netherlands 1997 – 1999
Exploration Geophysicist

- Imaged hydrocarbon reservoirs using 3D seismic data
 - Built and visualized 3D velocity-depth models of the subsurface
 - Integrated several data types and software tools to reduce and quantify uncertainty

Shell Laboratories (RTS), Geophysical services EPT-GS, Rijswijk, The Netherlands 1996 – 1997
Research Seismologist

- Led a team of experts in multicomponent (pressure and shear waves) signal processing
 - Demonstrated the added-value of processing shear wave signal to image complex targets like gas chimneys and sub-basaltic basins
 - Monitored industry developments in ocean-bottom recording systems and supervised contractors
 - Promoted the use of “recyclable” software that could quickly be adapted to different projects

Shell Central Offices – Seismic Processing EPX/221, The Hague, The Netherlands 1993 – 1996
Exploration Seismologist

- Target-oriented signal processing for unconventional land and marine acquisition geometries and recording systems

Bullard Laboratories, University of Cambridge, England 1991 – 1992
Research Associate

- Analyzed wide-angle ocean-bottom seismometer data from the British continental shelf to evaluate the performance of this technique for sub-basalt imaging
 - Secured continued support from the funding partner, Mobil North Sea Ltd.

PROFESSIONAL ASSOCIATIONS

Canadian Geophysical Union (CGU)
President (2015-2017), Vice-President (2013-15)

Canadian Exploration Geophysical Society (KEGS)
President (2015), Vice-President (2014), Secretary-Treasurer (2013)

Canadian Aeronautics and Space Institute (CASI)
Co-President of ASTRO Conference (2012)

Professional Engineers Ontario (PEO)