

Curriculum Vita

Dr. John Gosse

Department of Earth Sciences

Dalhousie University

October 7, 2016

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1 Contact Information

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2 Professional appointments

- 2016-pres **NSERC Evaluation Committee Member for new program**
2017 Operations and Maintenance Support (OMS) for Research Equipment (OMSRE) selection committee
- 2016-pres **Full Professor**
Department of Earth Sciences, Dalhousie University
- 2014-pres **Adjunct Professor**
Department of Marine, Earth, and Atmospheric Sciences, North Carolina State University Raleigh, NC
- 2009-2014 **Adjunct Professor**
Department of Earth Sciences, Waterloo University, Waterloo, ON
- 2009-2012 **NSERC Evaluation Committee Member**
Committee GSC-1506, Geosciences and RTI Committee for GSC-1506
- 2008-pres **Director, Dalhousie Geochronology Centre**
Department of Earth Sciences, Dalhousie U., Halifax, NS B3H 3J5
- 2002-pres **Director, Cosmogenic Nuclide Exposure-dating Facility**
Department of Earth Sciences, Dalhousie U., Halifax, NS B3H 3J5
- 2001-2009 **Adjunct Professor**
Lehigh University, Department of Earth and Environmental Sciences, Bethlehem, PA 18015
- 2001-pres **Courtesy Professor**
University of Kansas, Department of Geology, Lawrence, KS 68044
- 2001-pres **Associate Professor**
Dept. Earth Sciences, Dalhousie University Halifax, NS, B3H3J5
- 2001-2011 **Canada Research Chair: Earth Systems Evolution, two terms**
Dept. Earth Sciences, Dalhousie University Halifax, NS, B3H3J5
- 2001-2002 **National Science Foundation Panel Member**
Geology and Paleontology Program, NSF, Arlington, VA
- 1997-1999 **Scientific Consultant**
DOE-Yucca Mountain Project: EES-13 Los Alamos, NM 87545
Timing of faulting and volcanism in the Yucca Mountain region of the Nevada Test Site using cosmogenic radionuclides
- 1996-2005 **Director, KU-Cosmogenic Nuclide Extraction Laboratory**
Department of Geology, University of Kansas, Lawrence, KS 66045
- 1996-2001 **Assistant Professor**
Department of Geology, University of Kansas, Lawrence, KS 66045
- 1996-2003 **Scientific Contractor**
EES-13 Los Alamos National Laboratory, Los Alamos, NM, 87545
Applications of cosmogenic nuclides to LANL Environmental Restoration, rates of cliff retreat along MDA B and MDA V sites of Technical Area 21, Los Alamos

- 10/1994 – 07/1996 *in Bandelier Tuff, where mixed and nuclear waste is stored along cliff edge.*
Post-doctoral Research Associate
 EES-1, Los Alamos National Laboratory, Los Alamos, NM, 87545
Charles Harrington (sponsor); development of cosmogenic nuclide chronometers and surface history characterization techniques; application of various in situ produced cosmogenic nuclides to help constrain exposure ages and erosion rates of surfaces and timing and rates of movement along faults pertinent to the site assessment of the proposed site for nuclear waste disposal at Yucca Mountain, NV
- 01/1993 – 06/1994
Graduate Research Assistant
 Earth and Environmental Sciences, Lehigh University, Bethlehem PA 18015;
Edward Evenson (advisor); development and testing of cosmogenic nuclide surface characterization techniques
- 1990-1994
Teaching Assistant
 Earth and Environmental Sciences, Lehigh University, Bethlehem PA 18015:
Optical Mineralogy, Structural Geology, Historical Geology, Geomorphology, Sedimentology, Junior- and Senior-level 6-week geology field schools across US
- 1990-1994
Surficial Geology at the late Pleistocene Marine Limit
 Maine Geological Survey, Dept. of Conservation, Augusta, ME 43333
Woody Thompson (supervisor); two reports and four 1:24,000 surficial maps depicting materials data and Quaternary geology; maps were prepared specifically for a GIS (ARC-INFO) database; geological interpretation based mostly on a combination of glacial, hillslope, and fluvial geomorphology, air photo interpretation, regional stratigraphic correlation using bore hole data and sections exposed in sand pits and road cuts
- 07-08/1989
Surficial Geologist / Field Assistant
 Department of Mines and Energy, St. John's, NF A1C 5J9
David Liverman (supervisor); surficial mapping (1:100,000) and regional Quaternary deposit genetic interpretation
- 08/1988
Seismic Watch Keeper
 Dept of Earth Sciences, Memorial Univ. of Nfld, St. John's, NF A1C 3CX
Ali Aksu (Chief Scientist); CSS Dawson cruise to delineate Wisconsinan ice marginal positions along western Newfoundland and resolve local Quaternary marine stratigraphy
- 06-07/1988
Surficial Geologist / Field Assistant
 Geological Survey of Canada, TSD, Ottawa, ON, Canada K1A 0E8
Rodney Klassen (supervisor); assisted in regional (1:500,000) surficial geology mapping, lithological and geochemical sampling, and regional Quaternary stratigraphy, Labrador
- 07-08/1987
Surficial Geologist / Field Assistant
 Geological Survey of Canada, TSD, Ottawa, ON, Canada K1A 0E8
Andrée Bolduc (supervisor); assisted in intensive study of eskers and their utility in mineral exploration, Labrador
- 06-07/1987
Surficial Geologist / Field Assistant
 Geological Survey of Canada, TSD, Ottawa, ON, Canada K1A 0E8
Frank Thompson (supervisor); assisted in regional (1:1,000,000) reconnaissance surficial geology mapping, lithological and geochemical surveys and sampling, Labrador
- 06-08/1986
Surficial Geologist / Field Assistant
 Department of Mines and Energy, St. John's, NF; A1C 5J9

Martin Batterson (supervisor); assisted in regional (1:50,000) surficial geology mapping and geochemical (soil) sampling, Labrador

3 Teaching experience

3.1 University Courses

Dalhousie University, Department of Earth Sciences

U-Undergrad, G-Grad, C-Co-Taught

ERTH/GEOG 1060 Natural Disasters 2002-present (*U*)

ERTH 2000 First year geology field school 2013 & 2015 (*U, C, one-day*)

ERTH/GEOG 3302 Quaternary Sedimentary Environments 2013-pres (*U*)

ERTH 4000 Honours field trip 2005, 2011 (*U,C*)

ERTH 4002/5002 Advanced field school 2013-present (*U,G,C*)

ERTH 4440/5440 Geomorphology & Landscape Evolution 2003-2007 (*U,G*)

ERTH 4510 Directed Readings 2002-present, approx. every second year, (*U*)

ERTH 6300 Research Skills in Earth Sciences, various, 2005-2012 (*G, C*)

ERTH 6400 Geochronology 2004-present, 5 times (*G, C*), 2 times (*G*)

University of Kansas, Department of Geology

GEOL-101 Physical Geology 1997 (*U*)

GEOL-121 Historical Geology 1998-2001 (*U*)

GEOL-541 Geomorphology 1997-2001 (*U*)

GEOL-591/791 Special topics-Chemical Weathering 1999, 2000 (*U,G*)

GEOL-591/791 Special topics-Cosmogenic Isotopes 1999, 2001 (*U,G*)

GEOL-591/791 Quaternary Dating and Paleoclimatology 1998-2001 (*U,G*)

GEOL-591/791 Glacial Geomorphology 1997-2000 (*U,G*)

GEOL-591/791 Tectonic Geomorphology 2000-2001 (*U,G*)

3.2 Invited short courses

U. Toronto St. George Campus short course on TCN 03/2013

CANQUA-2009 Meeting, short course on TCN applications 05/2009

U. Kansas Theory and Application of Cosmogenic Nuclides 05/2006

CRICYT, Mendoza, Argentina Application of TCN 04/2006

GSC-Calgary-TCN and (U-Th)/He short course 01/2006

4 Education

Ph.D. Lehigh University, 01/1990 – 10/1994. Dissertation: *Alpine Glacial History Reconstruction: 1. Application of the cosmogenic ¹⁰Be exposure age method to determine the glacial chronology of the Wind River Mountains, Wyoming, USA 2. Relative dating of Quaternary deposits in the Rio Atuel Valley, Mendoza, Argentina* **Advisors:** Edward Evenson, Jeffrey Klein, Bob Giegengack, Dale Simpson, Fred Phillips

B.Sc. (Hon) Memorial University of Newfoundland, 09/1984 – 12/1989. Thesis: *Detailed description and preliminary stratigraphic and genetic interpretation of the Quaternary deposits in the South Pit of Scully Mine, Wabush, Labrador.* **Advisors:** Rodney A. Klassen, David Proudfoot

5 Awards

Prof of the Year Award, Department of Earth Sciences, 2014-2015
W.W. Hutchison Medal, Geological Association of Canada, 2005
Kirk Bryan Award, from Geological Society of America, 2005
Petro-Canada Young Innovators Award, 2004
Killam Prize, from Killam Trusts, 2004
J. Ross Mackay award, from the Canadian Geomorphological Research Group, 2003
Atlantic Prov. Council on Science & Atlantic Geol. Soc. lecture series speaker 2002
Univ. of Kansas Excellence in Teaching Award, 1998
Lehigh University Earth & Env. Science Best Graduate Lecture Award 1990
Newfoundland Graduate Resource Development Award; 1990
Newfoundland and Labrador Career Development Award; 1990 and 1991

6 Research Contributions

Most of my research involves the development and application of isotopes produced by cosmic rays. Of the cosmogenic nuclide experiments attempted, most involve (i) the evolution of landscapes in polar or glaciated regions in response to climate change, or (ii) measurements of timing or rates of natural hazard processes such as fault slip or landsliding.

6.1 Impact (Scholar Google) October 6, 2016:

Citation Indices	All	Since 2011
Citations	3710	2011
h-index	28	24
i10-index	48	40

Total number Submitted/Published items (excluding oral presentations): 88

6.2 Refereed journal publications-*submitted*

Grad and undergrad advisees, co-advisees, past advisees*, other students whom I served on supervisory committee or I helped in field, calculations, or lab^
Contributions: (5): PI with funding, (4): Co-PI, (3) Significant contribution to methodological strategy, field/lab components, and significant writing contribution, (2) lab/calculation components, some writing contribution; (1) lab or other components, minor writing contribution and read and edited the manuscript

1. Oppikofer, T., Saintot, A. Hermanns, R.L., Böhme, M. Scheiber, T., **Gosse, J.**, Eiken, T., Dreiås, G.M. (*revision submitted August 2016*). Rockslide or deep-seated gravitational slope deformation? Opposing failure development of the Ivasnasen and Vollan unstable rock slopes (Western Norway) despite similar morphological characteristics. *Geomorphology*. (3)
2. Menounos, B., Goehring, B.M, Osborn, G., Margold, M., Ward, B, Bond, J, Clarke, G.K.C., Clague, J.J., Lakeman, T, Koch, J, Schaefer J., Caffee, M., **Gosse, J.**, Stroeven, A.P., Seguinot, J., Heyman, J., Fulton, R., (*submitted October 2016*), Widespread evidence for climate reversals in western Canada at the Pleistocene-Holocene transition. *Nature Geoscience*. (1)
3. Margreth, A., **Gosse, J.**, Dyke, A., (*submitted September 2016*), Climatic sensitivity and dynamics of three different glacier styles on Cumberland Peninsula, Baffin Island, Canada. *Quaternary Science Reviews*. (5)
4. **Gosse, J.**, Hidy, A., Froese, D., Bond, J., Wilton, D. (*submitting late October 2016*), Testing a binge/purge model for landscape response during a major climate transition. *Nature Geoscience*. (5)
5. **Gosse, J.C.**, Ballantyne, A., Barker, J., Csank, A., Fletcher, T., Grant, G., Greenwood, D., McPhee, R., Rybczynski, N. (*submitting mid-October 2016*). POLAR-FIT: Pliocene Landscape and Arctic Remains, Frozen In Time. *Geoscience Canada*. (5)

6.3 Refereed journal publications-published/accepted

1. Smith, S.G., Wegmann, K.W., Ancuta, L.D., **Gosse, J.C.** and Hopkins, C.E., 2016. Paleotopography and erosion rates in the central Hangay Dome, Mongolia: Landscape evolution since the mid-Miocene. *Journal of Asian Earth Sciences*, 125, pp.37-57. (3)
2. Antinao, J.L.*, McDonald, E., Rhodes, E.J., Brown, N., Barrera, W., **Gosse, J.C.**, Zimmermann, S. 2016. Late Pleistocene-Holocene alluvial stratigraphy of southern Baja California, Mexico, *Quaternary Science Reviews*, Volume 146, 15 August 2016, Pages 161-181, ISSN 0277-3791 (1)
3. Schleier, M[^], Hermanns, R.L., **Gosse, J.C.**, Oppikofer, T., Rohn, J. and Tønnesen, J.F., (*available online August 2016*). Subaqueous rock-avalanche deposits exposed by post-glacial isostatic rebound, Innfjorddalen, Western Norway. *Geomorphology*. (3)
4. Utting, D.J.*, **Gosse, J.C.**, Kelley, S., Vickers, K., Ward, B.C., Trommelen, M.T. (2016) Deglacial and sea-level chronology for Foxe Peninsula, Baffin Island, Nunavut. *Boreas*. (4)
5. Margreth, A., **Gosse, J.C.**, Dyke, A. (2016) Quantification of subaerial and subglacial erosion rates on high latitude upland plateaus: Cumberland Peninsula, Baffin Island, Canada. *Quaternary Science Reviews* **133**, 108-129 (5)
6. Phillips, F.M., Argento, D., Balco, G., Caffee, M.W., Clem, J., Dunai, T., Finkel, R., Goehring, B., **Gosse, J.**, and 11 others. (2016) The CRONUS-Earth Project: A Synthesis. *Quaternary Science Reviews* **31**, 119-154 (2)
7. Marrero, S.M., Phillips, F.M., Caffee, M., **Gosse, J.** (2016). CRONUS-Earth cosmogenic ³⁶Cl calibration. *Quaternary Geochronology*. **31**, 199-219 (3)
8. Phillips, F. M., Argento, D. C., Bourlès, D. L., Caffee, M. W., Dunai, T. J., Goehring, B., **Gosse, J.C.**, and 8 others (2016). Where now? Reflections on future directions for cosmogenic nuclide research from the CRONUS Projects. *Quaternary Geochronology*. **31**, 155-159 (2)
9. Higgins, M., Schoenbohm, L. M., Brocard, G., Kaymakci, N., Gosse, J. C., & Cosca, M. A. (2015). New kinematic and geochronologic evidence for the Quaternary evolution of the Central Anatolian fault zone (CAFZ). *Tectonics*, 34(10), 2118-2141. (1)

10. Silver, C.R.P.[^], Murphy, M., Taylor, M.H., **Gosse, J.**, Baltz, T. (2015) Neotectonics of the Western Nepal Fault System: Implications for Himalayan strain-partitioning. **34**, 2494-2513 *Tectonics*. (3)
11. Schleier, M.[^], Hermanns, R.L., Rohn, J. **Gosse, J.C.** (2015). Diagnostic characteristics and paleodynamics of supraglacial rock avalanches, Innerdalen, Western Norway. *Geomorphology*. **245**, 23-39. (3)
12. Veloza, G., Taylor, M., Mora, A., & **Gosse, J.** (2015). Active mountain building along the eastern Colombian Subandes: A folding history from deformed terraces across the Tame anticline, Llanos Basin. *Geological Society of America Bulletin*, B31168-1. (3)
13. Lifton, N., Caffee, M., Finkel, R., Marrero, S., Nishiizumi, K., Phillips, F. M., Goehring, B., **Gosse, J.C.**, Stone, J., Schaefer, J., Theriault, B., Jull, A.J.T., Fifield, K. (2015). In situ cosmogenic nuclide production rate calibration for the CRONUS-Earth project from Lake Bonneville, Utah, shoreline features. *Quaternary Geochronology*, **26**, 56-69. (2)
14. Sturzenegger, M.[^], Stead, D., **Gosse, J.**, Ward, B., & Froese, C. (2014). Reconstruction of the history of the Palliser Rockslide based on ³⁶Cl terrestrial cosmogenic nuclide dating and debris volume estimations. *Landslides*, 1-10. (2)
15. Margreth, A., Dyke, A.S., Gosse, J.C., Telka, A.M. (2014) Neoglacial ice expansion and Late Holocene cold-based ice cap dynamics on Cumberland Peninsula, Baffin Island, Arctic Canada, *Quaternary Science Reviews*. **91**, 242-256. (4)
16. Webster, T.^{*}, **Gosse, J.**, Spooner, I., & Murphy, J. (2014). Remote Predictive Mapping 5. Using a Lidar Derived DEM to Test the Influence of Variable Overburden Thickness and Bedrock on Drainage and Basin Morphology. *Geoscience Canada* **41** (1), 89-104. (2)
17. Hidy, A. J., **Gosse, J. C.**, Blum, M. D., & Gibling, M. R. (2014). Glacial–interglacial variation in denudation rates from interior Texas, USA, established with cosmogenic nuclides. *Earth and Planetary Science Letters*, **390**, 209-221. (5)
18. Davies, N. S., **Gosse, J. C.**, & Rybczynski, N. (2014). Cross-Bedded Woody Debris From A Pliocene Forested River System In the High Arctic: Beaufort Formation, Meighen Island, Canada. *Journal of Sedimentary Research*, **84**(1), 19-25. (4)
19. Rittase, W. M., Kirby, E., McDonald, E., Walker, J. D., **Gosse, J.**, Spencer, J. Q., & Herra, A. J. (2014). Temporal variations in Holocene slip rate along the central Garlock fault, Pilot Knob Valley, California. *Lithosphere*, **6**(1), 48-58. (3)
20. Murphy, M. A., Taylor, M. H., **Gosse, J.**, Silver, C. R. P., Whipp, D. M., & Beaumont, C. (2014). Limit of strain partitioning in the Himalaya marked by large earthquakes in western Nepal. *Nature Geoscience*, **7**(1), 38-42. (4)
21. Pederson, J. L., Cragun, W.S., Hidy, A.J., Rittenour, T.M., **Gosse, J.C.** (2013) Colorado River chronostratigraphy at Lee's Ferry, Arizona, and the Colorado Plateau bull's-eye of incision-REPLY *Geology*. **41** (12), 304-304. (3)
22. Rybczynski, N., **Gosse, J. C.**, Harington, C. R., Wogelius, R. A., Hidy, A. J. and Buckley, M. (2013) Mid-Pliocene warm-period deposits in the High Arctic yield insight into camel evolution. *Nature Communications*. **4**. 1550. (4)
23. Pederson, J. L., Cragun, W.S., Hidy, A.J., Rittenour, T.M., **Gosse, J.C.** (2013) Colorado River chronostratigraphy at Lee's Ferry, Arizona, and the Colorado Plateau bull's-eye of incision. *Geology*. **41** (4), 427-430. (3)
24. Hidy, A. J., **Gosse, J. C.**, Froese, D. G., Bond, J. D., Rood, D. (2013) A Latest Pliocene age for the earliest and most extensive Cordilleran Ice Sheet in northwestern Canada. *Quat Sci Rev* **61**, 77-84. (4)
25. Gold, R. D.^{*}, dePolo, C., Briggs, R., Crone, A. and **Gosse, J. C.** (2013) Late Quaternary slip-rate variations along the Warm Springs Valley fault system, northern Walker Lane, California-Nevada border. *Bulletin Seismological Society of America*. **103** (1), 542-558. (3)

26. Mercader, J., Gosse, J. C., Bennett, T., Hidy, A. J. and Rood, D. H. (2012) Cosmogenic nuclide age constraints on Middle Stone Age lithics from Niassa, Mozambique. *Quat Sci Rev.* **47** 116-130. (4)
27. Laabs, B. J. C., Marchetti, D. W., Munroe, J. S., Refsnider, K. A., **Gosse, J. C.**, Lips, E. W., Becker, R. A., Mickelson, D. M. and Singer, B. S. (2011) Chronology of latest Pleistocene mountain glaciation in the western Wasatch Mountains, Utah, USA. *Quaternary Res.* **76** (2) 272-284. (2)
28. Hewitt, K., **Gosse, J.** and Clague, J. J. (2011) Rock avalanches and the pace of late Quaternary development of river valleys in the Karakoram Himalaya. *GSA Bulletin.* **123** (9-10) 1836-1850. (4)
29. Hidy, A., **Gosse, J.C.**, Pederson, J., Mattern, P., Finkel, R. (2010). A constrained Monte Carlo approach to modeling exposure ages from profiles of cosmogenic nuclides: an example from Lees Ferry, AZ. *Geochemistry, Geophysics, Geosystems.* **11**. Q0AA10, doi:10.1029/2010GC003084 (5)
30. Gold R. D., Cowgill, E., Arrowsmith, J.R., **Gosse, J.**, Chen, X, Wang, X.-F. (2009), Riser diachroneity, lateral erosion, and uncertainty in rates of strike-slip faulting: A case study from Tuzidun along the Altyn Tagh Fault, NW China, *J. Geophys. Res.*, **114**, B04401, doi:10.1029/2008JB005913 (3)
31. Lee, J., Garwood, J, Stockli, D.F., **Gosse, J.** (2009). Quaternary faulting in Queen Valley, California-Nevada: Implications for kinematics of fault-slip transfer in the eastern California shear zone-Walker Lane belt *GSA Bulletin*, **121**: 599 – 614 (2)
32. Antinao, J.-L., **Gosse, J.** (2009). Large rockslides in the Southern Central Andes of Chile (32-34.5° S): Tectonic control and significance for post-Miocene landscape evolution. *Geomorphology.* **144**: 117-133 (5)
33. Baker, S.E., **Gosse, J.C.**, McDonald, E., Evenson, E.B., Martinez, O. (2009). Quaternary history of the piedmont reach of the Rio Diamante, Mendoza, Argentina. *Journal of South American Earth Sciences.* **28**:54-73. (5)
34. Mangerud, J, **Gosse, J.**, Matiouchkov, A., Dolvik, T. (2008), Glaciers in the Polar Urals, Russia, were not much larger during the Last Global Glacial Maximum than today. *Quat Sci Rev.* **27**, 1047-1057 (2)
35. Ruzzante, D. Walde, S. **Gosse, J.** Cussac, Habit, Zemplak, Adams. (2008). Climate control on ancestral population dynamics: insight from Patagonian fish phylogeography. *Molecular Ecology.* **17**, 2234-2244. (2)
36. Belmont, P., Pazzaglia, F., **Gosse, J.** (2007). Cosmogenic ¹⁰Be as a tracer for hillslope and channel sediment dynamics. *Earth and Planetary Science Letters.* **264** (1) 123-135. (3)
37. Ward, B.C., Bond, J.D., **Gosse, J.C.**, 2007. Evidence for an MIS-4 (Early Wisconsinan) advance of the Cordilleran Ice Sheet, Yukon Territory, Canada. *Quaternary Research.* **68** (1) 141-150. (4)
38. Plug, L., **Gosse, J.**, West, J., Bigley, R. 2007 Attenuation of cosmic ray flux in temperate forest. *Journal of Geophysical Research.* **112**, F02022, doi:10.1029/2006JF000668. (4)
39. Osborn, J., Spooner, I., **Gosse, J.**, Clarke, D., 2007. Alpine glacial geology of the Tablelands, Gros Morne National Park, Newfoundland. *Canadian Journal of Earth Sciences* **44**, 819-834. (4)
40. Staiger, J., **Gosse, J.**, Toracinta, R., Oglesby, R., Fastook, J., Johnson, J. 2007, Atmospheric scaling of cosmogenic nuclide production: the climate effect. *Journal of Geophysical Research—Solid Earth.* **112**, B02205, doi:10.1029/2005JB003811. (5)
41. Staiger, J., **Gosse, J.**, Little, E., Utting, D. Finkel, R., Johnson, J., Fastook, J. 2006. Glacial erosion and sediment dispersion from detrital cosmogenic nuclide analyses of till. *Quaternary Geochronology.* **1**, 29-42. (5)

42. *Webster, T.J.*, Murphy, B., **Gosse, J.**, Spooner, I. 2006. Coupling LIDAR-derived landscape metrics and surface processes: An example from the Fundy Basin, Nova Scotia, Canada. *Canadian Journal of Remote Sensing*. **32**, 173-193. (3)
43. Pederson J.L., Anders, M.D., Rittenhour, T.M., Sharp, W.D., **Gosse, J.C.**, Karlstrom, K.E. 2006. Using fill terraces to understand incision rates and evolution of the Colorado River in eastern Grand Canyon, Arizona, *J. Geophys. Res.*, 111, F02003, doi:10.1029/2004JF000201. (4)
44. Briner, J., **Gosse, J.**, Bierman, P., 2006, Applications of terrestrial cosmogenic nuclides on the history of the Laurentide Ice Sheet, North America. in Siame, L.L., Bourlès, D.L., and Brown, E.T., eds., *Application of cosmogenic nuclides to the study of Earth surface processes: The practice and the potential: Geological Society of America Special Paper 415*, p. 29–41, doi: 10.1130/2006.2415(03) (4)
45. *Webster, T.*, Murphy, B., **Gosse, J.** 2006, Mapping subtle structures with light detection and ranging (LIDAR): flow units and phreatomagmatic rootless cones in the North Mountain Basalt, Nova Scotia *Canadian Journal of Earth Sciences*, **43**, 157-176. (3)
46. Anders, M.D., Pederson, J.L., Rittenour, T.M., Sharp, W.D., **Gosse, J.C.**, Karlstrom, K.E., Crossey, L.J., Goble, R.J., Stockli, L., Yang, G. 2005. Pleistocene geomorphology and geochronology of eastern Grand Canyon: linkages of landscape components during climate changes, *Quaternary Science Reviews*. **24**, 2428-2448. (4)
47. *Staiger, J. W.*, **Gosse, J. C.**, Johnson, J., Fastook, J., Gray, J. T., Stockli, D., Stockli, L., and Finkel, R., invited, 2005, Quaternary relief generation by polythermal glacier ice: a field calibrated glacial erosion model: *Earth Surface Processes and Landforms*. **30**. 1145-1159. (5)
48. Benson, L., Madole, R., Landis, G., and **Gosse, J.**, 2005, Late Pleistocene glaciation in the western U.S.—New data from southwestern Colorado and Wyoming: *Quaternary Science Reviews*, **24**, 49-65. (3)
49. *Marquette, G. C.*, Gray, J. T., **Gosse, J. C.**, Courchesne, F., Stockli, L., Macpherson, G., and Finkel, R., 2004, Felsenmeer persistence through glacial periods in the Torngat and Kaumajet Mountains, Quebec-Labrador, as determined by soil weathering and cosmogenic nuclide exposure dating: *Canadian Journal of Earth Sciences*, **41**, p. 19-38 (5)
50. Morris, J., **Gosse, J.C.** and Brachfeld, S., 2002. Cosmogenic ¹⁰Be and the Solid Earth: Studies in Geomagnetism, Subduction Zone Processes, and Active Tectonics. *Reviews of Mineralogy and Geochemistry*, Spec. Vol. **50** (4)
51. **Gosse, J. C.**, and Phillips, F. M. (2001). Terrestrial in situ cosmogenic nuclides: theory and applications. *Quaternary Science Reviews* **20**, 1475-1560. (5)
52. McGeehin, J., Burr, G., Jull, A., Reines, D., **Gosse, J.**, Davis, P., Muhs, D., and Southon, J., 2001, Stepped-combustion C-14 dating of sediment: A comparison with established techniques: *Radiocarbon*, **43**, p. 255-261. (4)
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6.6 Maps

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1. Margreth, A., **Gosse, J.**, Dyke, A. (*submitting Feb 2016*) Deglacial dynamics of ice sheet, ice cap, and alpine ice on Cumberland Peninsula. *Quaternary Research*. (4)
2. **Gosse, J.C.**, Hidy, A.J., Froese, D., Bond, J., Wilton, D. (*submitting Feb 2016*) Testing the weathering-limited climate-controlled global erosion model. *Nature Geosciences*. (5)
3. Creason, G., **Gosse, J.**, Yaehne, S., Young, M., Stubner, K., Currie, L., and others. (*March 2016*) Thermochronological evidence of slow exhumation since 350 Ma on Baffin Island, Nunavut. *Canadian Journal of Earth Sciences* (5)

6.8 Reports, popular magazines, and field guides, peer reviewed

1. Creason, C. G., **Gosse, J. C.** and Young, M. D. (2012) Rift flank uplift and landscape evolution of Hall Peninsula, Baffin Island: an exhumation model based on low-temperature thermochronology. *Activity Report 2012 AR12-08* 1-15. Canada Nunavut Geoscience Office Annual Report. (1)
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6. **Gosse, J.** 2008. Editorial. *Quaternary Geochronology*. **1**, 1, 2-3. (5)
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10. **Gosse, J.C.**, Reedy, R.C., Harrington, C.D., Poths, J., and Gillespie, A.R., June, 1996, Terrestrial cosmogenic nuclide dating: tested and ready for action: *EOS*. **77**, n. 29, p. 275-276. (5)

6.9 TED Talk or Television Production regarding our work:

2015 TED TALK, Nov 5, New York; Latif Nasser: Climate change, Pliocene warming, Arctic Camels

2015 *The Return of the Camelids*. Three 50-minute video series. Director: François Brey and Patrice Desenne, Producer Grand Angle Productions. (Each reminds viewer of the evolution of camelids in the Canadian Arctic. Spin-off videos also produced for TV5.

6.10 Oral and poster presentations by Gosse, students, and colleagues

1. Lukens, W., Snell, K., Martin, R., Uno, K., **Gosse, J.**, Fox-Dobbs, K. 2016. Early Pleistocene paleo-landscapes at Borchers Badlands, Meade Basin, southwest Kansas. GSA Annual Mtg, Denver, Paper 24-7.
2. Langille, J., Lee, J., Blisniuk, K., Sharp, W., **Gosse, J.**, Torres, A. Rates of Quaternary dextral slip within the Central Walker Lane, Western Nevada. GSA Annual Mtg, Denver, Paper 265-3.
3. **Gosse, J.**, Hidy, A., Froese, D., Bond, J., Wilton, D. 2016. Climate controlled the Klondike placer formation. Atlantic Geoscience Society Meeting. Truro, NS.
4. Paige, C. 2016. A UHV extraction line for in-situ produced cosmogenic ¹⁴C to improve the reliability of dating strain markers. Atlantic Geoscience Society Meeting. Truro, NS.
5. Ward, B., Bond, J., **Gosse, J.**, Turner, D. 2015. Timing and rate of deglaciation of the MIS2 Cordilleran Ice Sheet, Yukon Territory. AGU Annual Fall Meeting, San Francisco P51C-2294.
6. Meltzer, A., and 22 others. 2015. Betwixt and Between: Structure and evolution of Central Mongolia. AGU Annual Fall Meeting, San Francisco. T22A-25.
7. **Gosse, J.**, Hidy, A., Froese, D., Bond, J. 2015. Regolith stripping at the Plio-Pleistocene transition: Evolution of the Klondike Placer. GSA National Meeting, Baltimore.
8. **Gosse, J.**, Braschi, L., Hidy, A., Rybczynski, N., Froese, D., Yang, G., Lakeman, T. 2015. Landscape response to the Pliocene-Pleistocene climate transition, Yukon and High Arctic, Canada. (Invited) CANQUA 2015.
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10. **Gosse, J.C.**, Bell, T. 2015 Collapse of the Newfoundland Ice Sheet-Implications for a Pre-

- Bolling Warming. NE-GSA Meeting White Mountains, New Hampshire.
11. Ross, M., **Gosse, J.** 2015 Detrital cosmogenic ^{10}Be of till from contrasting landscapes on Hall Peninsula, Baffin Island: investigating the relationship among multiple proxies of glacial dynamics. NE-GSA Meeting. White Mountains, New Hampshire.
 12. Wegmann, K.W., Tamra, M., Sabaj Perez, M., Lopresti, M., Cole, M.B., **Gosse, J.C.**, Smith, S.G., Bayasgalan, G., Ancuta, L.D., McDannell, L.D., Gallen, S.D., 2014, Geomorphic and Fish Genetics Constraints on Late Cenozoic Long Wavelength Topographic Evolution of the Hangay Mountains, Central Mongolia. AGU Annual Mtg San Francisco
 13. Antinao, J.L., McDonald, E., Rhodes, E.J., Barrera, **Gosse, J.**, Brown, N.D. 2015. Late Pleistocene-Holocene alluvial stratigraphy of southern Baja California, Mexico. 2014. GSA Annual Mtg, Vancouver
 14. Bond, J.D., Ward, B.C., and **Gosse, J.C.** 2014. Late Pleistocene deglaciation of the Cordilleran Ice Sheet from southwest Yukon: timing, recession rates, and implications. GSA Annual Meeting. Vancouver.
 15. Oppikofer, T., Dreias, G.M., Saintot, A., Hermanns, R.L., **Gosse, J.** 2014. Geological and structural control of the Ivasnasen and Vollen unstable rock slopes (western Norway). 3rd Slope tectonics Conference. Trondheim, Norway.
 16. Braschi, L.C., Lakeman, T., Rybczynski, N., Yang, G., **Gosse, J.C.** 2014. New developments in the chronostratigraphy, paleoenvironment, and significance of the Pliocene Beaufort Formation and associated sediments, western and high Canadian Arctic. GAC Annual Meeting. Fredericton. Abstracts p 40.
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30. M.C. Morriss, K Wegmann, R.I. Carson, **J Gosse** 2013 Quaternary glacial sequences in Mongolia—Evidence of climatic asynchrony, GSA Annual Meeting in Denver
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6.11 Invited presentations

1. CANQUA2015 August 2015 Invited speaker for geochronology special session
2. Memorial U. Newfoundland March 2015
3. Aarhus U., Aarhus Denmark June 2014
4. U. Toronto Mississauga, March 2014

5. U. Toronto main campus-TCN Short course, March 2014
6. Discovery Centre *Science on the Road*, Natural Disasters Lectures to six Jr High Schools in Halifax Regional Municipality, 2013
7. Dept. Physics, Dalhousie U., 2011
8. Keynote, Pardee Symposium, GSA-Minneapolis, 2011
9. Invited speaker, INQUA 2011 Mtg, Bern, Switzerland, Special Session on Developments in Geochronology, 8/2011
10. Geological Survey of Canada-Atlantic, GSC-Atlantic Science Hour lecture series, 4/2011
11. Keynote speaker, GSA-Annual Meeting, Denver, Special Session on Dating of Alluvial Records-10/2010
12. CANQUA-2009 Meeting Short Course on TCN applications, 05/2009
13. AGS Last 4 billion years- public lecture, Nova Scotia Museum of Natural History, 02/2009
14. NASA-Haughton Mars Project Inv. Lecture. "Age and landscape evolution of the Haughton Crater, 07/2010
15. Polar Perspectives IPY Speaker Series, public lecture, Nova Scotia Museum of Natural History, 11, 2008
16. CRONUS-EU Summer School, Harkany, Hungary, cosmic ray physics and TCN applications, 6/2006
17. University of Kansas, short course on theory and applications of cosmogenic isotopes 5/2006
18. CRICYT, Mendoza, Argentina 4/2006
19. GSC-Ottawa, 2/2006
20. U. Lethbridge, 1/2006
21. GSC-Calgary sponsored TCN and (U-Th)/He short courses, 1/2006
22. U.Calgary, 1/2006
23. U. Alberta, 1/2006
24. Union Session 10-Advances in Cosmogenic Nuclides, AGU Annual Meeting, 12/2005
25. Symposium on Glacier Dynamics in Arctic Canada, GSA National Conference, Denver, 10/2005
26. LIS Lecture, Lamont, 9/2005
27. Cosmogenic Nuclides Symposia SS-17, Goldschmidt Conference, Idaho, 5/2005
28. Department of Earth and Environmental Sciences, Lehigh U., 9/2004
29. GSC-Quebec, 4/2004
30. Department of Geological Sciences, U Maine, 4/2004
31. Rocky Mountain Landscape Evolution Symposia, GSA Seattle, 2003
32. Department of Geology, University of New Brunswick, 10/2002
33. Department of Geology, St. Francis Xavier, 10/2002
34. Department of Earth Sciences, Memorial University, 10/2002
35. Department of Geology, Acadia University, 9/2002
36. Department of Earth and Environmental Science, Lehigh University, 9/2002
37. Advances in terrestrial cosmogenic nuclides, Goldschmidt Conference, 8/2002
38. Department of Geology, University of Missouri, 3/2001
39. Department of Earth Sciences, Dalhousie University, 6/2000
40. Department of Geology, Iowa State University, 10/2000
41. Department of Earth Sciences, Dalhousie University, 06/2000
42. Gerry Richmond Rocky Mountain Symposium, Annual GSA, 10, 2000
43. Clinton Lake State Park, 08/1999
44. Physics, Purdue University, IN; 02/1999
45. Geology, Baylor University, Waco, TX, 01/1999

46. Geology, University of Nebraska, Lincoln, NE; 10/1997
47. Geology, Purdue University, IN; 05/1997
48. Quaternary Studies Center, University of Maine, ME, 05/1996
49. American Association for the Advancement of Science, 02/1996
50. Department of Geology, University of Kansas, KS, 02/1995
51. Department of Geology, Arizona State University, AZ; 02/1994
52. Terrain Sciences Div., Geological Survey of Canada, Ottawa; 09/1993
53. EES-1, Los Alamos National Laboratory, NM; 05/1993

7 Major Research Support (available while at Dalhousie)

7.1 Grants and Awards as Principal Investigator

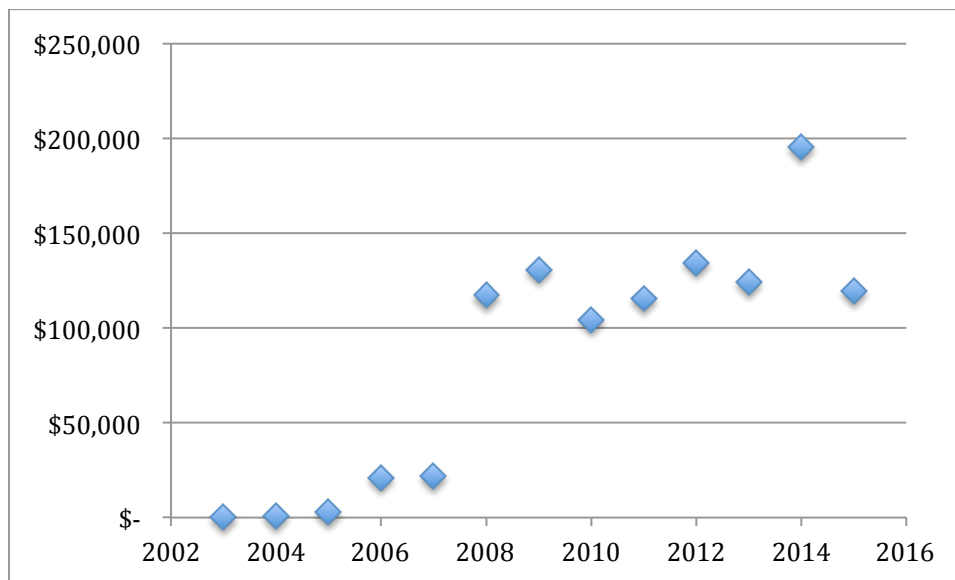
PERIOD	SOURCE	TITLE	AMOUNT
2015-2016	NSERC-DG	Development and application of cosmogenic nuclide methods to analyse Cenozoic landscape responses to climate and tectonic change	\$40,000
2015-2016	NSERC-NRS	The evolution of western Arctic landscape during the past 5 million years	\$15,000
2014-2015	NSERC-DG	Development and application of cosmogenic nuclide methods to analyse Cenozoic landscape responses to climate and tectonic change	\$40,000
2014-2015	NSERC-NRS	The evolution of western Arctic landscape during the past 5 million years	\$15,000
2013-2014	NSERC-DG	Development and application of cosmogenic nuclide methods to analyse Cenozoic landscape responses to climate and tectonic change	\$40,000
2013-2014	NSERC-NRS	The evolution of western Arctic landscape during the past 5 million years	\$15,000
2012-2013	NSERC-DG	Late Cenozoic of the Canadian Arctic archipelago and the southern central Andes	\$40,000
2012-2013	NSERC-NRS	Landscape evolution in the Arctic	\$15,000
2011-2012	NSERC-CRC	Canada Research Chair in Earth Systems Evolution	\$25,000
2011-2012	NSERC-DG	Late Cenozoic of the Canadian Arctic archipelago and the southern central Andes	\$40,000
2011-2012	NSERC-MRS	Canadian cosmogenic nuclide exposure dating facility	\$91,000
2011-2012	NSERC-NRS	Landscape evolution in the Arctic	\$15,000
2010-2011	NSERC-CRC	Canada Research Chair in Earth Systems Evolution	\$100,000
2010-2011	NSERC-DG	Late Cenozoic of the Canadian Arctic archipelago and the southern central Andes	\$40,000
2010-2011	NSERC- MRS	Canadian cosmogenic nuclide exposure dating facility	\$45,500
2010-2011	NSERC-NRS	Landscape evolution in the Arctic	\$10,000
2009-2010	NSERC-CRC	Canada Research Chair in Earth Systems Evolution	\$100,000
2009-2010	NSERC-DG	Late Cenozoic of the Canadian Arctic archipelago and the southern central Andes	\$40,000
2009-2010	NSERC- MRS	Canadian cosmogenic nuclide exposure dating facility	\$45,500
2009-2010	NSERC-NRS	Landscape evolution in the Arctic	\$10,000
2008-2009	NSERC-DG	Late Cenozoic of the Canadian Arctic archipelago and the southern central Andes	\$40,000
2008-2009	NSERC- MRS	Canadian cosmogenic nuclide exposure dating facility	\$45,500
2008-2009	NSERC-NRS	Landscape evolution in the Arctic	\$20,000
2008-2009	NSERC-CRC	Canada Research Chair in Earth Systems Evolution	\$100,000
2007-2008	NSERC-RTI	Low-background vacuum extraction and	\$148,822

		graphitisation system for 14C	
2007-2008	NSERC-DG	Landscape evolution with cosmogenic isotopes	\$35,000
2007-2008	NSERC-CRC	Canada Research Chair in Earth Systems Evolution	\$100,000
2006-2007	NSERC-DG	Landscape evolution with cosmogenic isotopes	\$35,000
2006-2007	NSERC-CRC	Canada Research Chair in Earth System Evolution	\$25,000
2006-2007	NSERC-CRC	Canada Research Chair in Earth Systems Evolution	\$75,000
2005-2006	NSERC-DG	Landscape evolution with cosmogenic isotopes	\$35,000
2005-2006	NSERC-CRC	Canada Research Chair in Earth System Evolution	\$100,000
2004-2005	NSERC-DG	Landscape evolution of the southern Central Andes: insights from glacial and alluvial records and cosmogenic isotopes	\$33,000
2004-2006	PetroCan	Young Innovators Award: Late Cenozoic Variation in Sediment Flux Rates of Streams Entering the Gulf of Mexico	\$25,000
2004-2005	NSERC-CRC	Canada Research Chair in Earth System Evolution	\$100,000
2003-2004	NSERC-DG	Landscape evolution of the southern Central Andes: insights from glacial and alluvial records and cosmogenic isotopes	\$33,000
2003-2004	NSERC-CRC	Canada Research Chair in Earth System Evolution	\$100,000
2002-2003	NSERC-DG	Landscape evolution of the southern Central Andes: insights from glacial and alluvial records and cosmogenic isotopes	\$33,000
2002-2003	NSERC-CRC	Canada Research Chair in Earth System Evolution	\$100,000
2002-2007	AIF+matches	Atlantic cosmogenic nuclide exposure dating facility (excluding CFI,NSRIT)	\$1,600,000
2001-2006	NS-RIT fund	Development of a cosmogenic nuclide extraction laboratory	\$225,000
2001-2006	CFI	Development of a cosmogenic nuclide extraction laboratory	\$225,000
2001-2002	NSERC-DG	Landscape evolution of the southern Central Andes: insights from glacial and alluvial records and cosmogenic isotopes	\$33,000
2001-2002	NSERC-CRC	Canada Research Chair in Earth System Evolution	\$75,000
2000-2003	NSF-ESH	Test of synchronicity of alpine glacier responses to regional high amplitude climate reversals: Southern Andes	\$234,156
1999-2002	NSF-Polar	Modelling geomorphological and cosmogenic-nuclide constraints on the volume of the Quebec-Labradorean Sector of the last Laurentide Ice Sheet	\$341,296
TOTAL GRANT FUNDING AS PRINCIPAL INVESTIGATOR			\$4,698,774

7.2 Grants and Awards as official Co-Principal Investigator ('000s C\$)

PERIOD	SOURCE	TITLE	To Dalhousie	Total Grant
2018-2023	CFI-IF	<i>Submitted:</i> Ultra-Sensitive Tracers in Advanced Research	\$577	\$9,800
2017-2022	CFI-MSI	The Andre E. Lalonde Accelerator Mass Spectrometry Facility for Environmental Radionuclides	\$380	\$2,400
2011-2012	NSERC-CRD	Fingerprinting glacial processes for diamond exploration on Baffin Island (PI-Ross, UWaterloo)	\$25	\$51
2009-2015	CFI-LEF	Canadian Accelerator Mass Spectrometry (AMS) Facility (PI-Clark, UOttawa)	\$458	\$21,023
2009-2015	CFI-NIF	Innovations in the chronology of global changes: Dating Earth Surface Processes (PI-Lamothe, UQAM)	\$-	\$839
2003-2004	NSERC-RTI	A helium isotope mass spectrometer and extraction system for U-Th/He dating (PI-Reynolds)	\$145	\$145
1999-2002	NSF-GPP	Combined cosmogenic nuclides and soils stratigraphy for alluvial fan chronology and regional correlation: Eastern Mojave, California; 55% to E. McDonald DRI	\$145	\$300
TOTAL GRANT FUNDING AS CO-PI			\$1,153	\$24,758

7.3 Annual expenditures from fee-for-service agreements and 1-year contracts, by Sep 2015



Total fee-for-service and small contract funds spent since 2003: \$1,089,168

7.4 Individual contracts, most with overhead

Year	Agency	Contract Title	Amount
2015	NRCan-Allard	3D-thermochronology model and analysis of Baffin Island exhumation history	\$11,556
2014	NRCan-Allard	3D-thermochronology model and analysis of Baffin Island exhumation history	\$8,500
2013	NRCan-Blasco	Stratigraphy of the Beaufort Outer Shelf (with Lakeman/Nixon)	\$39,000
2013	NRCan-King	Cosmogenic nuclide exposure analysis of glacial cobbles from the Grand Banks of Newfoundland; Towards a glaciation chronology	\$19,655
2009	NRCan-Percival	Cosmogenic Nuclide Exposure Geochronology, Numerical Modeling and Low Temperature (UTh)/He Thermochronology services for the Cumberland Peninsula Integrated Geoscience (CPIG) project	\$62,500
2008	NRCan/CNGO-James	Surface exposure dating on Baffin Island	\$21,600
2007	NRCan/GSC-Pac-Hermanns	CIDA Exposure dating of landslides in S. America	\$8,288
2007	Yukon Geol Surv.-Bond	Chronology of moraines in western Yukon	\$6,250
2007	NRCan/GSC-Pac-	CIDA Exposure dating of landslides in S. America	\$17,320

	Hermanns		
2007	Yukon Geol Surv.- Bond	Chronology of moraines in western Yukon	\$1,350
		TOTAL CONTRACTS	\$196,019

8 HQP training

I have trained, supervised, or co-supervised over 107 scientists and students:

Supervised 27 Honours, M.Sc., or Ph.D.

Supervised 2 NSERC-USRA projects

Supervised 2 Post-doctoral fellows

Supervised 2 Geochemistry technicians

Co-supervised or participated on committees for 25 graduate students

Trained/hosted 16 additional visiting scientists

Trained over 35 undergraduate and graduate student research assistants
(not listed)

8.1 Graduate and Undergraduate Students Supervised

current	P. Manion	Hons.	Dalhousie U.	Undergrad <i>Lithospheric flexure controls on the evolution of the Northwest Passages, Arctic Canada</i>
current	S. Vokey	Hons.	Dalhousie U.	Undergrad <i>Fluvial sedimentation style and rate changes in the high plains of North America at the Plio-Pleistocene Transition, Meade Basin, Kansas</i>
current	C. Paige	M.Sc.	Dalhousie U.	M.Sc. student <i>Developments in the measurement of cosmogenic ^{14}C in quartz</i>
2015	S. Des Roches	Hons.	Dalhousie U.	Research assistant Dal. <i>Testing a grain-size dependent isochron cosmogenic nuclide burial dating method: Eastern Cordillera, Colombian Andes</i>
2015	L. Braschi	M.Sc.	Dalhousie U.	Environ. Scientist CBCL <i>Chronostratigraphy of the Beaufort Formation, western Canadian Arctic Archipelago</i>
2015	G. Creason	M.Sc.	Dalhousie U.	Ph.D. student, Oregon State <i>Phanerozoic Exhumation History of Hall Peninsula, Baffin Island: Insights from Apatite and Zircon ($U\text{-Th-Sm}$)/He Thermochronology and 3D Thermokinematic Modeling</i>
2015	A. Margreth	Ph.D.	Dalhousie U.	Post-doc, Norwegian Geol. Survey <i>Climate sensitivities of polythermal ice sheet, ice cap, and alpine ice dynamics and related episodic erosion on Cumberland Peninsula, Baffin Island, Nunavut</i>
2014	L. Brown	Hons.	Dalhousie U.	graduate student SFU <i>Testing the application of cosmogenic ^{10}Be as a tracer for subglacial processes in till at Conrad's Head, Nova Scotia</i>
2013	A. Hidy	Ph.D.	Dalhousie U.	Post-doc, Lawrence Livermore Nat'l Lab <i>Cosmogenic nuclide quantification of paleo-fluvial sedimentation rates in response to climate change</i>
2013	S. Des Roches	USRA	Dalhousie U	Research assistant-DGC <i>Establishing the SOPs for the Vulcan automated acid digestion system</i>

- 2013 **T. Forstner** **Hons.** **Dalhousie U.** **Environmental industry**
Bedrock incision and relief generation of the western Hangay Dome, Mongolia
- 2012 **R. Hurnik** **USRA** **Dalhousie U.** **Medical School**
Establishing the SOPs for the Leeman Labs Prodigy ICP-OES
- 2012 **J. Drysdale** **Hons** **Dalhousie U** **M.Sc. student, U. Ottawa**
Element mobility as a result of chemical weathering of a granodiorite near Valparaiso, Chile
- 2011 **S. Ma** **USRA** **Dalhousie U.** **Graduate student, Dalhousie**
Determining erosion rate of alluvial fan surfaces with cosmogenic ^{14}C
- 2010 **T. Bachiu** **M.Sc.** **Dalhousie** **Environmental Scientist-AECOM consulting**
Investigating sources of stream chloride near Kejimikujik National Park, southwestern Nova Scotia: A chlorine stable isotope approach
- 2009 **J.-L. Antinao** **Ph.D** **Dalhousie U.** **Research Professor, Desert Research Inst.**
Quaternary Landscape Evolution of the Southern Central Andes of Chile Quantified Using Landslide Inventories, ^{10}Be and ^{36}Cl Cosmogenic Isotopes and (U-Th)/He Thermochronology
- 2008 **S. Yaehne** **Hons.** **Dalhousie U.** **Mining geologist/MBA at Sauder School of Business**
Apatite (U-Th-Sm)/He thermochronology of the Eastern Arctic Rim: Evolution of the north-central Baffin Island rifted margin
- 2007 **S. Kelley** **Hons.** **Dalhousie U.** **Post-doc at U. Waterloo**
Pinning the timing of deglaciation of the Western Foxe Peninsula, Baffin Island, Nunavut
- 2006 **H. Neilson** **Hons.** **Dalhousie U.** **Airforce/SAR pilot**
Landform Evolution in the South Central Andes: Determining the Major Mechanisms of Formation of the Great Escarpment Between 32 and 38 Degrees South, Argentina
- 2005 **S. Baker** **M.Sc.** **Dalhousie U.** **Research Scientist, Desert Research Inst.**
The Quaternary history of the Rio Diamante, Mendoza Province, Argentina
- 2005 **D. Brushett** **Hons** **Dalhousie U.** **Research scientist, NL Dept Natural Resources**
Cosmogenic nuclide dating of glaciomarine deltas in southern maine
- 2005 **J. Willenbring (Staiger)** **Ph.D** **Dalhousie U.** **Associate Prof, UPenn**
Glacial erosion in Atlantic and Arctic Canada determined by terrestrial in situ cosmogenic nuclides and ice sheet modeling
- 2004 **J. McIntosh** **Hons** **Dalhousie U.** **completed M.Sc., Dal, now Env. Consultant**
Analysis of range-scale topographic changes from digital topography in the southern-central Andes (Latitudes 32-39 deg. S)
- 2004 **A. Hilchey** **Hons** **Dalhousie U.** **employed in mineral industry**

				<i>Holocene Deglacial Geologic History of the Ravn River Valley, Northern Baffin Island, Nunavut</i>
2003	F. MacDonald	Hons	Dalhousie U.	completed M.Sc. U. Calgary, now env. consulting
				<i>Glacial geology and chronology of the Peggy's Cove region, Nova Scotia</i>
2002	C. Spies	M.Sc.	Kansas U.	geologist, Exxon-Mobil
				<i>Evolution of a transpressional ridge along the Carrara Fault, Nye County, Nevada, USA</i>
2001	D. Jackofsky	M.Sc.	Kansas U.	geologist, Exxon-Mobil
				<i>Quaternary Glacial Chronology and Climate Dynamics in Tierra del Fuego, Chile and at Lago Nahuel Huapi, Argentina</i>
1999	K. Zentmire	Hons	Kansas U.	Environmental Consulting
				<i>The problem of inheritance when dating alluvial fans and terraces with TCN: Insight from the Matanuska Glacier</i>
1998	J. Fyfe	M.Sc.	Kansas U.	Retired military
				<i>Extent of glaciation in northeastern Kansas inferred from pebble lithologies and SEM quartz grain microtexture analysis</i>

8.2 Postdoctoral fellows and other HQP supervised

2015-2016 **Sean Des Roches (Geochemistry/ICP Technician)**
Dalhousie Geochronology Centre

2014-2015 **Dr. Thomas Lakeman (Post Doc)**
Onshore-offshore chronostratigraphy of the Beaufort Formation, western Arctic Canada
Currently Research Scientist, Norwegian Geological Survey

2007 **Dr. Anne (Reuther) Gold (Post Doc)**
Research on the geochronology of deglaciation in the southern Andes and Atlantic Canada
Currently Paleoclimatologist, CIRES (U. Colorado/NOAA)

2002-pres **Guang Yang (Geochemistry Technician)**
Dalhousie Geochronology Centre

2001-2002 **Dr. Lisa Stockli (Geochemistry Technician)**
U. Kansas Dept. Geology

8.3 Students co-supervised(1), or I was a committee member(2)

current	L. Broom (1)	M.Sc.	Dalhousie U	graduate student
current	P. Hilger (2)	Ph.D.	University of Oslo	graduate student
current	G. Bayasgalan (2)	Ph.D.	North Carolina St.	graduate student
current	J. Egan(1*)	Ph.D.	St Francis Xavier	graduate student

current	L. Brown(2)	M.Sc.	Simon Fraser U.	graduate student
current	J. Hawken(1*)	M.Sc..	Dalhousie U.	part time graduate student
current	Y. Evangeletos(1*)	Ph.D.	Dalhousie U.	graduate student
current	G. Veloza(2)	Ph.D.	Kansas U.	graduate student
2016	S. Smith(2)	Ph.D.	North Carolina St	graduate student
2014	K. Landry(2)	M.Sc.	Dalhousie U.	graduate student
2010	J. Griffiths(2)	M.Sc.	Dalhousie U.	unknown
2010	S. Sakalima(2)	Ph.D.	Dalhousie U.	Post Doc, now unknown
2010	P. van Hengstum(2)	Ph.D.	Dalhousie U.	Post Doc, WHOI, now unknown
2008	P. Belmont(2)	Ph.D.	Lehigh U.	Assoc Prof, Western Colorado
2007	C. Sherard(2)	M.Sc.	Western Wash U.	Environmental consulting
2007	O. Sherwood(2)	Ph.D.	Dalhousie U.	Research Scientist, U. Colorado
2006	J. McIntosh(2)	M.Sc.	Dalhousie U.	Environmental consulting
2006	T. Webster(2)	Ph.D.	Dalhousie U.	Instructor, Centre of Geographic Systems
2004	T. Hundret(2)	M.Sc.	Dalhousie U.	Research scientist, GSC-Atlantic
2003	J. P. Centeno(1)	M.Sc	Kansas U	Engineering Company
2002	J. Dillon(2)	Ph.D.	Kansas U.	Assoc. prof, U. Nebraska, Kearney
2002	B. Zaprowski(2)	Ph.D.	Lehigh U.	Assoc. prof, Salisbury U.
1999	G. Baker(2)	Ph.D.	Kansas U.	Research Chair, Assoc Prof, U. Tennessee
incomp.	A. Novak (1)	M.Sc	Dalhousie U.	Terminated position after 1 year
incomp.	J. Schroeder(2)	Ph.D.	Kansas U.	Environmental company in Colorado
incomp.	K. Vaughan(2)	M.Sc.	Dalhousie U.	Unknown/supervisor left

* students for whom I am an official co-supervisor because the principal supervisor is not a member of the regular faculty of Dalhousie U.

8.4 Visiting researchers (excludes students and researchers previously listed)

Y. Ates	1 year, 2016	Süleyman Demirel U.	TUBITAK awardee, TCN training
E. Huenupi	12 days, 2014	DRI	Isotope geochemist
R. Styron	14 days, 2012	U. Wisconsin	Ph.D. student, ³⁶ Cl prep
M.A. Logan	21 days, 2012	U. Kansas	M.Sc. student ³⁶ l prep
T. Lakeman	14 days, 2011	Alberta	student, TCN sample prep
S. Hall	1 day, 2009	McGill	assist. prof, establishing lab at McGill
T. Tremblay	2 days, 2009	C-NGO	surficial manager, strategies for Arctic
R. Gold	weeks, 2007	U. California	student, TCN training
J. Pederson	week, 2007	Utah St. U	assist. prof, TCN for Grand Canyon
B. Ward	2005-2006	SFU	Sabbatical, assoc. prof, TCN training
J. Doupe	1 day 2005	U. Alberta	consultation for establish. lab U. Alb
P. Belmont	weeks, 2006	Lehigh U.	student, TCN training
E. Evenson	2004	Lehigh U.	Sabbatical, prof, TCN training
A. Hidy	weeks, 2005	Utah State U.	student, TCN training
O. Martinez	month, 2003	Ud. Patagonia	collaborator, TCN training
A. Reuther	month, 2003	Ut. Regensberg	student, TCN training

9 Professional Service

9.1 Service to Dalhousie University

Department of Earth Sciences positions, committees, service

2016	Search Committee Chair, CRC Coastal Zone Processes
2015-2016	Colloquium series coordinator
2015	Compiled the current Dept Graduate Student Handbook (45 p)
2015	Search committee for Asst. Prof position
2015-2016	Shell Fund Committee
2013-pres	Graduate coordinator
2011-2014	Outreach committee
2008-2013	Search committee member for two IRC and one asst prof searches
2007-2014	Space committee advisor, as needed
2007-2013	Promotion and Tenure Committee and/or chair
2006-2016	Associate Chair for most years
2007-2010	GAC-Department Representative
2003-pres	Graduate advisory committee, most years
2003-2007	Faculty liaison for undergraduate Dawson Geology Society
2003-pres	Initiated and updated department's Strategic Plans

Faculty of Science

2016	Faculty committee, for Dept. Biology internal review (postponed)
2014	Chair, Search committee for Biology Chairperson
2011	FOS CO-OP Program Review committee
2005	Participant, FOS committee for innovative first year curriculum

Dalhousie University

2015-2016	Negotiation PSAC Post-doctoral union (Dal board member)
2013	Internal reviews of NSERC RTI proposals (reviewer)
2012	Panel on NSERC grant writing (panelist)
2011	Bermuda Alumni Reception Lecture

9.2 Service to the scientific community

Editorships

2013-2015	Encyclopedia of Scientific Dating Methods, Section Editor,
2008-2010	Quaternary Geochronology Co-Editor, inaugural year
2006-2011	Geological Society of America Bulletin Associate Editor
2004-2006	Encyclopedia of Quaternary Science, Section Editor,
1999-2003	Journal of Environment Science, Associate Editor

Thesis External Examiner/Evaluation Committee

- 2016 North Carolina State U., Marine, Earth, and Atmospheric Sciences (Ph.D)
- 2015 Dalhousie University Dept. Oceanography (M.Sc.)
- 2008 Stockholm University Dept. Physical Geography (Ph.D.)
- 2003 Acadia University Dept. Earth and Environmental Science (M.Sc.)
- 2000 University of Kansas Dept. Geography (Ph.D.)

Promotion/Tenure Referee

- Athabasca University
- University of Alberta
- ETH-Zurich

Scientific Panels for Government White Papers, Facilities

- 2013-pres Board Member, Lalonde Accelerator Mass Spectrometry Centre, U.Ottawa
- 2003 USGS/U. Arizona White Paper for Frontier Joint Arid Region Research Inst.
- 2001 US-DOE-Advisory panel for non-destruction dating of native rock art

Proposal review panels

- 2016-2017 NSERC-1506 *New Program*: Operations and Maintenance Support for Research Equipment (OMSRE) selection committee
- 2010-2013 NSERC-1506 Geoscience DG and RTI
- 2000-2001 NSF-Geology and Paleontology

Referee of proposals for the following funding agencies (approx. # reviews)

- CNRS-France (1)
- Swiss National Science Foundation (1)
- US-Israel Bilateral Science Foundation grants (1)
- NSF-Polar Programs (>5)
- NSF-Earth System History Program (1)
- NSF-Geology and Paleontology Program (>10, excluding during panel membership)
- NSF-Tectonics Program (3)
- NSF-Facilities and Instrumentation Program (4)
- NSERC-Discovery Grant Program (8)
- Canada Research Chair proposals (3)
- Canadian Foundation for Innovation (3)

Referee for the following journals

Interdisciplinary:

Science, Nature, Science Advances, Nature Geoscience, Nature Communications

Disciplinary:

Chemical Geology, Earth and Planetary Science Letters, Earth Surface Processes and Landforms, EOS, Geochimica et Cosmochimica Acta, Geographie Physique et Quaternaire, Geomorphology, Geology, GSA Bulletin, Journal of Geophysical Research (Solid Earth, Atmospheres, Earth Surface), Quaternary Geochronology, Quaternary Research, Quaternary Science Reviews, Reviews of Mineralogy, Tectonics, Tectonophysics, Catena

Membership and roles in scientific societies

Atlantic Geoscience Society (current member, Internal Auditor 2015-2017)
Canadian Quaternary Association (current member)
Canadian Geomorphological Research Grp (councilor 2004-2008, current member)
Geological Association of Canada (councilor 2007-2010, current member)
Geological Society of America (elected **Fellow** since 2004, current Fellow)
American Geophysical Union (member)
Quaternary Geology and Geomorphology Division of GSA (board member 2004-2006, current member)

Organizational Activities

2017 Co-organizer, AMS-14 at uOttawa, and Field Trip Leader in Western Newfoundland
2015 Co-organizer, Arctic Pliocene Workshop, Ottawa
2015 CANQUA- assisted with portions of the program, St. John's, NL, Canada
2015 Session co-convener, Northeast Geol Soc Am Ann. Mtg, Mt. Washington Resort, NH
2013 Co-convener-Ann. Mtg American Geophysical Union, San Francisco
2011 Organizing committee, 41st Ann. International Arctic Workshop, Montreal, QC
2011 Session co-convener, Geol. Assoc. Canada Ann. Mtg, Ottawa
2006 Organizer, Atlantic Canada Ice Dynamics Workshop ACID-2, Halifax, NS, Canada
2005 Organizer, International Workshop on Tectonics of Southern Central Andes, Halifax
2005 CANQUA National Mtg, Organizing committee, Halifax, NS, Canada
2004 Session co-convener, National GSA Mtg-Denver
2003 Organizing committee, Northeast GSA Annual Mtg, Halifax, NS, Canada
2003 Organizer, Atlantic Canada Ice Dynamics Workshop ACID-1, Halifax, NS, Canada
1996 Organizer, Int. Workshop, Cosmogenic Nuclide Production Rates, Los Alamos Nat'l Lab
1995 Organizing committee, 58th Northeast Friends of the Pleistocene Mtg, Maine
1994 Organizing committee, 38th Pacific Friends of the Pleistocene Mtg, Wyoming

Other service to scientific community

2004-2014 Member of the CRONUS-Earth program (Cosmic-Ray prOduced Nuclide Systematics) to improve our knowledge of cosmic ray physics, radionuclide decay rates, interaction cross-sections, nuclide production rates, sample procedures, and interlaboratory comparisons

9.3 Service to the public

Research and teaching coverage in media:

2015 TED TALK, Nov 5, New York; Latif Nasser: Climate change, Pliocene warming, Arctic Camels
2015 DISCOVER Magazine, April, writes 8-page article featuring our High Arctic research
2014 CBC Mainstreet Jan 31, Interview regarding Nepal tectonics
2014 Dal News Jan Article on Nepal tectonics (Sarah Beatty)

2013 and 2014 Nunatsiaq News July 2013 and June 2014 regarding Northerner field training
 2013 March 10, The National-United Arab Emirates “Camels, well known in Arctic Circles” by Matt Kwong
 2013 Quirks and Quarks, CBC March 9 interview with N. Rybczynski “Camels in the High Arctic”
 2013-May Discovery Centre “Science in the News” article, by Sarah Dowler
 2013-April Canadian Geographic “Giant camel remains found in Canadian High Arctic” by Heather Yundt
 2013-March 16, Islam.RU article by Matt Kwong “Camels, Well known in Arctic Circles”
 2013 Dal News March article on Pliocene climate, camel, and high Arctic
 2013 Chronicle Herald March 7 Selena Ross article: “The giant Arctic camel: Have hump, will travel”
 2013 Huffington Post Science March 7 article by Sara Gates “Camel Fossils Found In Arctic Suggest Ancient Creatures Roamed Region 3.5 Million Years Ago”
 2013 The Telegraph, India March 7 “Icy hunch on the hump-Camel fossils on Arctic island throws up a theory” by G.S. Mudur
 2013-March 6-The Australian “Camels were once the ship of the Arctic, paleobiologists find”
 2013 Edmonton Journal, March 6, by Margaret Munro, “Camel’s remains found in Canada’s Arctic”
 2013 National Post article, March 5, by Margaret Munro, “Giant ancient camel remains discovered in Canadian Arctic”
 2013 The Globe and Mail: Ivan Semeniuk article: Paging Lawrence of Nunavut: Camel fossils found in Canadian Arctic
 2013 CBC-Don Connolly CBC Info Morning regarding Pliocene camel, Arctic climate
 2013 CBCNew-“Next stop on the Camel Caravan: Canada’s High Arctic” by Max Paris
 2010 CBC-Montreal, Interview regarding Haitian Earthquake

Other Outreach

2016 Discussion with Gros Morne National Park HQ for improvements in displays
 2013 Named Discovery Centre Nova Scotia Feature Scientist and presenter for Inspiring Discovery (series of lectures at various Junior High Schools)
 2010 Jan. Nova Scotia Prospectors Association, lecture on glacial dynamics of NS
 2010 Jul. Polar Continental Shelf Program Lecture to the 2010 International Ambassador Tour
 2009 Apr. AGS Last 4 Billion Years- public lecture, Nova Scotia Museum of Natural History
 2008 Nov. Polar Perspectives IPY Speaker Series, public lecture, Nova Scotia Museum of Natural History

School lectures/demonstrations

2015-Caldwell Road Elementary School-Minerals and chemistry
 2013-Discovery Centre Science-on-the-Road Astral Drive Junior High
 2013-Discovery Centre Science-on-the-Road Prince Arthur Junior High
 2013-Discovery Centre Science-on-the-Road Madeline Symonds Junior High
 2011-Nov Beaverbank Scout Troup-Isotope analyses in geology tour

2011-Caldwell Road Elementary School-Hurricanes
2010-Oct Astral Drive Junior High School-Natural Disasters and Rocks
2009-Nov Gaetz Brook Junior High School-Natural Disasters
2009-Dec Astral Drive Elementary-Soils around the world
2007-Nov Gaetz Brook Junior High School-Rocks, Minerals, Chemistry
2006-Astral Drive Elementary
2006-Caldwell Road Elementary