

*Curriculum Vitae*

**1.1. BIOGRAPHICAL INFORMATION**

**1.1.1. PERSONAL**

**Name:** Marc Laflamme

Assistant Professor, Department of Chemical and Physical Sciences  
Research Associate, National Museum of Natural History, Smithsonian Institution  
Research Associate, Royal Ontario Museum

**Work Address:**

University of Toronto Mississauga  
Davis Building, Room 4054  
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**1.1.2. DEGREES**

- A. Doctor of Philosophy in Geological Sciences (Paleontology), 2007
  - a. *Institution:* Department of Geological Sciences and Geological Engineering, Queen's University, Kingston, Ontario, Canada.
  - b. *Title:* Ediacaran fronds from the Mistaken Point assemblage, Newfoundland
  - c. *Supervisor:* Dr. Guy M. Narbonne
  
- B. Bachelor of Science (Agriculture) in Applied Zoology, 2000
  - a. *Institution:* Natural Resource Sciences, McGill University, Montreal, Quebec, Canada.
  - b. *Thesis:* Diptera (fly) diversity in Baltic amber
  - c. *Supervisor:* Dr. Terry A. Wheeler

**1.1.3. PAST EMPLOYMENT**

<b>Smithsonian Institution Postdoctoral Fellow</b> National Museum of Natural History 10th St. & Constitution Ave. NW, Washington, DC 20560, United States	01/01/2011-31/12/2012
<b>Bateman Postdoctoral Associate</b> Department of Geology & Geophysics Yale University, P.O. Box 208109 New Haven, CT 06520-8109, United States	01/01/2009-31/12/2010
<b>NSERC Postdoctoral Fellow</b>	01/09/2008-31/12/2008

Department of Geosciences, Virginia Tech  
Derring Hall, RM4044, 1405 Perry ST  
Blacksburg, VA 24061, United States

**NSERC Postdoctoral Fellow**

01/05/2008-31/08/2008

Department of Geological Sciences and Geological Engineering  
Queen's University  
Bruce Wing/Miller Hall  
36 Union Street  
Kingston, Ontario K7L 3N6, Canada

**1.1.4. HONOURS**

**1.1.4.1. SCHOLARSHIPS AND FELLOWSHIPS:**

- A. Smithsonian Institution Fellowship Program, National Museum of Natural History, Washington, DC, Jan. 2011 – Dec. 2012.
- B. Bateman Postdoctoral Fellowship, Yale University, CT, Jan. 2009 – Dec. 2010.
- C. Natural Sciences and Engineering Research Council of Canada Fellowship, May 2008 - May 2010
- D. Natural Sciences and Engineering Research Council of Canada Scholarship, Sept. 2005 - Aug. 2007
- E. Ontario Graduate Scholarship, September 2004 - August 2005
- F. Queen's Graduate Awards, Sept. 2003 - Aug. 2004
- G. Carl Reinhardt Fellowship, Sept. 2002 - Aug. 2003
- H. Queen's Graduate Awards, Sept. 2001 - Aug. 2002

**1.1.4.2. AWARDS:**

- A. Supplement for Early Career Researchers, Natural Sciences and Engineering Research Council of Canada, support outstanding research in the natural sciences and engineering fields - March 2013.
- B. Rupert H. MacNeil Best Paper Award, Atlantic Geosciences Society Annual Meeting and Colloquium, Moncton, NB – Feb. 2007
- C. Christopher Knapper Award (Teaching Excellence) Queen's University - March 2006
- D. Adams Club Graduate Student Symposium Speaker Award - March 2006
- E. Advances in Earth Sciences Research Conference Best Poster Award, March 2005
- F. Student Conference Travel Award, Sept. 2003 and Oct. 2005
- G. T.E. Bolton Award for Best Paper: Paleontology division, Annual Meeting of the Geological Association of Canada, Sept. 2002. (Co-winner)

**1.1.5. PROFESSIONAL AFFILIATIONS AND ACTIVITIES**

**1.1.5.1. EXTERNAL COMMITTEES:**

- A. Secretary, Ediacaran Subcommittee of the International Commission on Stratigraphy, 2012-2016.
- B. Chair of the Geological Society of America Geobiology and Geomicrobiology division, October 2014-2016.

- C. Chair, Paleontological Society Student Grants, 2013, 2014, 2015
- D. Secretary of the Geological Society of America Geobiology and Geomicrobiology division. October 2010-2012.
- E. Member, Paleontological Society Student Grants, 2012

#### **1.1.5.2. EDITORSHIP:**

- A. Associate Editor, *Frontiers*, starting in January 2015
- B. Associate Editor, *Palaeogeography, Palaeoclimatology, Palaeoecology*, special issue *Ediacaran Environments and Ecosystems*, May 2014-2015
- C. Associate Editor, *Geobiology*, starting in January 2013.
- D. Associate Editor, *Palaios* special issue: *Lagerstätte through time: An examination of exceptional preservational pathways from the terminal Proterozoic through today*. May 2011.

#### **1.1.5.3. ORGANIZER AND CHAIR: ACADEMIC MEETINGS:**

- A. P3. Earth-Life Systems at the Dawn of Animals. Pardee Keynote Symposia. Geological Society of America Annual Meeting, Baltimore, MA. November 2015. Co-chairs: Schiffbauer, J.D., and Darroch, S.A.F.
- B. Paleontological Society Short Course. *Reading and writing of the fossil record: Preservational pathways to exceptional fossilization*. Geological Society of America Annual Meeting, Vancouver, BC. October 2014. Co-chairs: Schiffbauer, J.D., and Darroch, S.A.F.
- C. S01: Ediacaran Environments and Ecosystems, North American Paleontological Convention (Feb. 2014), Co-chairs: Lidya Tarhan and Marc Laflamme
- D. S04: What comes after death: current topics in actualistic taphonomy and integrative paleobiology, North American Paleontological Convention (Feb. 2014), Co-chairs: Emma R. Locatelli, Madeline S. Marshall, Marc Laflamme, James D. Schiffbauer, and Simon Darroch.
- E. T54a,b: Multidisciplinary Approaches to Studying the Causes and Consequences of Mass Extinction: Geochemistry, Paleocology, and Paleoenvironments, GSA Annual Meeting (Oct. 2011). Co-chairs: Marc Laflamme and Simon Darroch.
- F. Discussion Leader: Gordon Research Conference on Geobiology, Ventura, CA. Jan. 2011.
- G. T117a,b: Lagerstätte through time: An examination of exceptional preservational pathways from the terminal Proterozoic through today, GSA Annual Meeting (Oct. 2010). Co-chairs: James D. Schiffbauer and Marc Laflamme.
- H. T50: Quantifying the Early Evolution of Life: Numerical Approaches to the Evaluation of Precambrian/Cambrian Animals and Ecosystems, GSA Annual Meeting (Oct. 2008). Co-chairs: Marc Laflamme and Steven Q. Dornbos.
- I. Paleontology V: Early Life, GSA Annual Meeting (Oct. 2007) Co-chairs: Marc Laflamme and Shuhai Xiao.
- J. Lead organizer: 5th annual Advances in Earth Sciences Research Conference, Sept. 2005 – Feb. 2006. Conference: March 2-3, 2006

#### **1.1.5.4. PROFESSIONAL AFFILIATIONS:**

Paleontological Society (USA), Society for Sedimentary Geology (USA), Palaeontological Society (UK), Geological Society of America (USA), Geological Association of Canada (Canada), Geological Society of Namibia (Namibia), Paleobiological Database - database authorizer, Member of the “Advent of Complex Life” working group in affiliation with the NASA Astrobiology Institute (NAI).

#### **1.1.5.5. REVIEWS:**

**1.1.5.5.1. Reviewed articles for:** Science, Science Advances, Nature, Nature Geoscience, Nature Communications Proceedings of the National Academy of Sciences (PNAS), Geology, Journal of the Geological Society of London, Proceedings of the Royal Society of London B, Current Biology, Palaeogeography, Palaeoclimatology, Palaeoecology (P<sup>3</sup>), Geobiology, Scientific Reports, Journal of Paleontology, Palaeontology, Palaios, Sedimentology, Precambrian Research, Frontiers, Biological Reviews, and SEPM Special Volumes.

#### **1.1.5.5.2. GRANT REVIEW PANELS:**

- A. Natural Sciences and Engineering Council of Canada (NSERC), December 2014.
- B. National Science Foundation (NSF), February 2014. April 2014.
- C. Natural Environment Research Council (NERC), November 2013.
- D. NASA Exobiology Peer Review Panel, May 2011, August 2012, October 2013.
- E. Paleontological Society Student Grants, March 2012, 2013, 2014, 2015

## **1.2. ACADEMIC HISTORY**

### **1.2.1 RESEARCH ENDEAVOURS**

**1.2.1.1 Overview:** My research has significantly expanded our understanding of the Ediacara biota, which represent the precursors and direct competitors to the oldest animals on Earth. My multidisciplinary research combines numerical methods and advanced instrumentation (i.e. see my edited volume: Laflamme et al., 2011), with experimental procedures and field work into a single research direction focusing on unraveling the true diversity at the dawn of animal life, and in explaining preservational biases in the early animal fossil record.

**1.2.1.2. *Ediacaran preservation*:** My studies (Darroch, Laflamme et al., 2012; Laflamme et al., 2011; Laflamme et al., in prep) used advanced instrumentation such as environmental scanning electron microscopy (ESEM) to analyze geochemical and sedimentological aspects of Ediacaran fossilization. My novel approach involved characterizing, for the first time, exceptionally-preserved Ediacaran fossils and comparing the results to those obtained in experiments designed to replicate Ediacaran-style preservation.

**1.2.1.3. *Ediacaran extinction*:** Following the success of my GSA session (T54: Multidisciplinary Approaches to Studying the Causes and Consequences of Mass Extinction), I was invited by *Gondwana Research* to write a review of the extinction of the Ediacaran biota (Laflamme et al., 2013), and how it relates to the Cambrian explosion of complex animal life (Erwin, Laflamme, et

al., 2011). My research supports a system-wide ecological restructuring resulting from biological pressures associated with the evolution of predation, the expansion of bioturbation, and the biomechanical change from osmotrophic (osmosis-only feeding) to filter-feeding ecosystems. This timely review will guide future studies on the origin and early evolution of animals. Recent publications on this topic from my laboratory include Darroch et al. (2015), Darroch et al. (in review, *Geology*).

**1.2.1.4. *Ediacaran classification*:** My description, interpretation, and classification of Ediacaran organisms over the past 10 years have significantly expanded our knowledge of the oldest Ediacaran *Lagerstätten* in Newfoundland (Laflamme et al., 2004; Laflamme et al., 2007, 2011b, 2012; Narbonne, Laflamme, et al., 2009), Australia (Laflamme et al., accepted), and northwestern Canada (Narbonne, Laflamme et al., 2014). Alpha taxonomy is the basis for all community-level studies, and is essential in defining and interpreting diversity and disparity in the oldest communities. My work has been pivotal in constructing character-based phylogenetic (evolutionary) relationships amongst the enigmatic Ediacara biota, allowing for the erection of a hierarchical classification scheme (Narbonne, Laflamme, et al., 2009; Laflamme et al., 2012).

**1.2.1.5. *Ediacaran phylogeny*:** The evolutionary relationships within the Ediacara biota, and how they are related to modern animals, are topics of significant controversy and central to my research direction. My review of Ediacaran fronds (Laflamme and Narbonne, 2008a,b) showcased that previous phylogenetic relationships represented shared ecologies and functional morphologies, rather than shared ancestries, implying that these forms were unrelated to each other. This led to collaborations with world renowned paleontologists (Xiao and Laflamme, 2009; Erwin, Laflamme, et al., 2011) which proposed that Ediacaran organisms represent an assortment of clades with distinct evolutionary histories all sharing a common mode of preservation (Narbonne, 2005; Xiao and Laflamme, 2009; Erwin, Laflamme, et al., 2011).

**1.2.1.6. *Ediacaran form and function*:** My theoretical modeling of Ediacaran feeding strategies, which demonstrated the importance of a high surface-area to volume constructions in osmotrophic feeding, has been pivotal in the debate surrounding the affinities of the Ediacara biota (Laflamme et al., 2009; Laflamme, 2014). My functional morphology research directed several external research programs, leading to extensive consultation and co-authorship (Singer, Plotnick and Laflamme, 2012; Sperling, Peterson, and Laflamme, 2011; Ghisalberti, Gold, Laflamme et al. 2014). Recent collaborations have resulted in an innovative modeling approach, computational fluid dynamics (CFD), which was used to quantitatively analyze the hydrodynamic behavior of the enigmatic 555-million-year-old Ediacaran fossil *Tribrachidium* (Rahman et al., 2015).

## **1.2.2. RESEARCH AWARDS**

### **Total External Funding: \$478,152.00**

- A. Early Research Award. Ediacaran Fossils from Iran and the Dawn of Animal Life. May 2015. **Value: \$150,000.00**
- B. Ministry of Research and Innovation and Canadian Foundation for Innovation, May 2014. Title: Exceptional preservation in the fossil record. **Value: \$103,252.00**
- C. Connaught New Researcher Award. May 2014. The Ediacaran Extinction and the Dawn of Animal Life. **Value: \$50,000.00**

- D. Committee for Research and Exploration (CRE) Grant, National Geographic Society, May 2013. Title: The Ediacaran extinction and the dawn of animal life. **Value \$14,900.**
- E. NSERC 2013 Discovery Grant (RGPIN 435402), May 2013-2017. Title: Deconstructing Biases in the Fossil Record of the Oldest Animals: Experimental and Geochemical Studies in Soft-Tissue Preservation. Value (32,000.00 per year): **Value \$160,000.00**
- F. Supplement for Early Career Researchers, Natural Sciences and Engineering Research Council of Canada, support outstanding research in the natural sciences and engineering fields - March 2013.

**Total Internal Funding: \$10,000**

- A. University of Toronto Mississauga Research and Scholarly Activity Fund. January 2016. Title: The Dawn of Animal Life from Central Iran. **Value: \$10,000**

**1.3. SCHOLARLY AND PROFESSIONAL WORK**

As a geobiologist, my research has investigated a range of topics from the functional morphology of the oldest fossil animals to circumstances surrounding exceptional preservation of soft tissues in the fossil record. My multidisciplinary research combines numerical methods and advanced instrumentation, with experimental procedures and field work, to produce a single research direction focusing on unraveling biases in the fossil record. I am a world leader on the biology and preservation of the Ediacara biota, the oldest large, structurally complex organisms that may represent the oldest known animals, however, most likely represent extinct groups which disappeared from the fossil record prior to the great Cambrian explosion. Their disappearance could represent the biological extinction of these organisms, or it could instead result from the closing of a fossilization pathway reliant on microbial mats and temporally restricted to the Precambrian. My research combines laboratory experiments with field-based studies along the coasts of Newfoundland, the outback of South Australia, and the desert plains of Namibia. My research pioneered the use of environmental scanning electron microscopy (ESEM) to study the geochemical and sedimentological context of Ediacaran fossils. I have published 37 peer-reviewed publications (19 as first or corresponding author) including articles in *Science*, *Science Advances*, *Nature Geoscience*, *PNAS*, *Proceedings of the Royal Society (B)*, and *Trends in Ecology and Evolution*, seven of which have over 50 citations each (H index of 16, i.10 of 18 as of January 2016). My research has been featured in popular science media including CBC's *Quirks and Quarks*, *Canadian Geographic*, *l'Actualité*, and *New Scientist*, and I also participated in the History Channel documentary *Evolve* (episode 7, *Guts*).

Since my arrival at UTM (2013), I have specifically modified my authorship listing as follows: if the research represents my own individual initiative, I am first author; if the research was conducted in my laboratory, or strongly driven by my research and funding, I took last authorship which is becoming the norm in paleontological sciences. This allows my students to keep primary authorship while still acknowledging my research input into project funding, design and implementation. Otherwise, my position within the authorship list will represent my direct contribution to the project (from second author onwards).

**1.3.1. PUBLICATIONS (\*denotes students)**

- 1) \*Boag, T.H., Darroch, S.A.F., and **Laflamme, M.** Accepted. Ediacaran distributions in space and time: testing assemblage concepts of earliest macroscopic body fossils. *Paleobiology*. 46 pages + figures.
- 2) \*Locatelli, E.R., \*Krajewski, L., \*Chochinov, A.V., and **Laflamme, M.** Accepted. Taphonomic variance between marattialean ferns and medullosan seed ferns in the Carboniferous Mazon Creek lagerstätte, Illinois, USA. *Palaios*. 37 pages + figures.
- 3) \*Cotroneo, S., Schiffbauer, J.D., McCoy, V.E., Wortmann, U.G., Darroch, S.A.F., Peng, Y., and **Laflamme, M.** Accepted. A new model of the formation of Pennsylvanian iron carbonate concretions hosting exceptional soft-bodied fossils in Mazon Creek, Illinois. *Geobiology*. 34 pages + figures.
- 4) **Laflamme, M.**, Gehling, J. G., and Droser, M. L. Accepted. Deconstructing an Ediacaran frond: Three-dimensional preservation of *Charniodiscus (Arborea)* from Ediacara, South Australia. *Journal of Paleontology*. 28 pages + figures.
- 5) Rahman, I., Darroch, S.A.F., Racicot, R.A., and **Laflamme, M.** 2015. Suspension feeding in the enigmatic Ediacaran organism *Tribrachidium* demonstrates complexity of Neoproterozoic ecosystems. *Science Advances* 1 (10): e1500800
- 6) **Laflamme, M.** and Darroch, S.A.F. 2015. Palaeobiology: Ecological Revelations about Ediacaran Reproduction. *Dispatch, Current Biology* 25 (21), R1047-R1050.
- 7) Darroch, S.A.F., Sperling, E.A., \*Boag, T.H., Racicot, R.A., \*Mason, S.J., \*Morgan, A.S., \*Tweedt, S., Myrow, P., Erwin, D.H. and **Laflamme, M.** 2015. Biotic replacement and mass extinction of the Ediacara biota. *Proceedings of the Royal Society B*.
- 8) Tarhan, L. and **Laflamme, M.** 2015. An Examination of the Evolution of Ediacaran Paleoenvironmental and Paleocological Research. *Preface in the special issue "Ediacaran Environments and Ecosystems"* in *Palaeogeography, Palaeoclimatology, Palaeoecology*, 434:1-3.
- 9) **Laflamme, M.** and Piunno, P.A.E. 2015. Innovation in palaeontological research driven by students and non-specialists. *Palaeontology Online*.  
<http://www.palaeontologyonline.com/articles/2015/education-outreach-innovation-palaeontological-research/>
- 10) **Laflamme, M.**, Darroch, S.A.F., and Schiffbauer, J.D. 2014. Reading and writing of the fossil record: preservational pathways to exceptional fossilization. *Preface in Laflamme, M., Darroch, S.A.F., and Schiffbauer, J.D. Reading and writing of the fossil record: preservational pathways to exceptional fossilization. The Paleontological Society Papers Volume 20.*
- 11) **Laflamme, M.** 2014. Modeling morphological diversity in the oldest large multicellular organisms. *Proceedings of the National Academy of Sciences USA*. 111 (36): 12962-12963.
- 12) Narbonne, G.M., **Laflamme, M.**, Trusler, P.W., Dalrymple, R.W., and Greentree, C., 2014. Deep-Water Ediacaran Fossils from Northwestern Canada: Taphonomy, Ecology, and Evolution. *Journal of Paleontology*, 88: 207-223.
- 13) Ghisalberti, M., \*Gold, D., **Laflamme, M.**, Clapham, M.E., Narbonne, G.M., Summons, R.E., Johnston, D.T., Jacobs D.K. 2014. Canopy Flow Analysis Reveals the Advantage of Size in the Oldest Communities of Multicellular Eukaryotes. *Current Biology*, 24: 305-309.

- 14) \*Darroch, S.A.F., **Laflamme, M.**, and Clapham, M.E. 2013. Population structure of the oldest known macroscopic communities from Mistaken Point, Newfoundland. *Paleobiology*, 39: 591-604.
- 15) Eriksson, P.G., Banerjee, S., Catuneanu, O., Corcoran, P.L., Eriksson, K.A., Hiatt, E.E., **Laflamme, M.**, Lenhardt, N., Long, D.G.F., Miall, A.D., Mints, M.V., Pufahl, P.K., Sarkar, S., Simpson, E.L., and Williams, G.E. 2013. Secular Changes in Sedimentation Systems and Sequence Stratigraphy. *Gondwana Research* 24: 468–489.
- 16) **Laflamme, M.**, \*Darroch, S.A.F., \*Tweedt, S., Peterson, K.J., and Erwin, D.H. 2013. The end of the Ediacara biota: extinction, biotic replacement, or Cheshire Cat? *Gondwana Research*, 23: 558–573.
- 17) \*Singer, A., Plotnick, R., and **Laflamme, M.** 2012. Fluid Mechanics of *Charniodiscus*. *Palaeontologia Electronica*, 15.2.19A. <http://palaeo-electronica.org/content/2012-issue-2-articles/255-frond-biomechanics>
- 18) Dornbos, S. Q., Clapham, M. E., Fraiser, M. L., and **Laflamme, M.** 2012. Chapter 5: Lessons from the Fossil Record: The Ediacaran Radiation, the Cambrian Radiation, and the End-Permian Mass Extinction. p. 52-72. *In* Solan, M., Aspden, R.J., and Paterson, D.M. eds., *Marine Biodiversity Futures and Ecosystem Functioning frameworks, methodologies and integration*, Oxford University Press. 256 p.
- 19) Schiffbauer, J.D., and **Laflamme, M.**, 2012. Lagerstätten through Time: A Collection of Exceptional Preservation Pathways from the Terminal Neoproterozoic through Today. *Palaios*, 27: 275-278.
- 20) \*Darroch, S.A.F., **Laflamme, M.**, Schiffbauer, J.D. and Briggs, D.E.G. 2012. Experimental Formation of a Microbial Death Mask. *Palaios*, 27: 293-303.
- 21) Pruss, S., \*Clemente, H., and **Laflamme, M.** 2012. Early (Series 2) Cambrian archaeocyathid reefs as a locus for skeletal carbonate production: New insights from the Forteau Formation, southern Labrador. *Lethaia*, 45: 401-410.
- 22) **Laflamme, M.**, \*Flude, L.I., and Narbonne, G.M. 2012. Ecological tiering and the evolution of a stem: the oldest stemmed frond from the Ediacaran of Newfoundland, Canada. *Journal of Paleontology*, 86: 193–200.
- 23) **Laflamme, M.**, Schiffbauer, J.D., and Narbonne, G.M., 2011, Deep-Water Microbially Induced Sedimentary Structures (MISS) in Deep Time: The Ediacaran Fossil Ivesheadia, *in* Noffke, N.K., and Chafetz, H., eds., *Microbial Mats in Siliciclastic Depositional Systems Through Time: SEPM Special Publication No. 101*. p. 111–123.
- 24) Erwin, D.H., **Laflamme, M.** \*Tweedt, S.M. Sperling, E.A., Pisani, D., and Peterson, K.J. 2011. The Cambrian Conundrum: Early Divergence and later Ecological Success in the Early History of Animals. *Science*, 334: 1091-1097.
- 25) **Laflamme, M.** and \*Casey, M.M. 2011. Morphometrics in the study of Ediacaran fossil shapes. *In* *Quantifying the Evolution of Early Life: Numerical and Technological Approaches to the Evaluation of Fossils and Ancient Ecosystems*. Edited by Laflamme, M., Schiffbauer, J.D., Dornbos, S.Q. Springer’s Topics in Geobiology series, 36: 49-72.
- 26) \*Sperling, E.A., Peterson, K.J., and **Laflamme, M.** 2011. Rangeomorphs, *Thectardis* (Porifera?) and dissolved organic carbon in the Ediacaran ocean. *Geobiology*, 9: 24-33.



- 27) **Laflamme, M.**, Schiffbauer, J.D., Narbonne, G.M., and Briggs, D.E.G. 2011. Microbial biofilms and the preservation of the Ediacara biota. *Lethaia*, 44: 203-213.
- 28) **Laflamme, M.** 2010. Wringing out the oldest sponges. *Nature Geosciences, News and Views*, 3: 597-598.
- 29) Xiao, S., Kowalewski, M., Shen, B., Dong, L. and **Laflamme, M.** 2010. The rise of bilaterians: a few closing comments. *Historical Biology*, 22: 433–436.
- 30) **Laflamme, M.**, Xiao, S., and Kowalewski, M. 2009. Osmotrophy in modular Ediacara organisms. *Proceedings of the National Academy of Sciences USA*. 106 (34): 14438–14443.
- 31) Narbonne, G.M., **Laflamme, M.**, Greentree, C., and Trusler, P. 2009. Reconstructing a lost world: Ediacaran Rangeomorphs from Spaniard’s Bay, Newfoundland. *Journal of Paleontology*, 83 (4): 503-523.
- 32) Xiao, S., and **Laflamme, M.** 2009. On the Eve of Animal Radiation: Phylogeny, Ecology, and Evolution of the Ediacara Biota. *Trends in Ecology and Evolution*, 24 (1): 31-40.
- 33) Xiao, S., Kowalewski, M., Shen, B., Dong, L. and **Laflamme, M.** 2009. The rise of Bilaterians: a reply. *Historical Biology*, 21: 239–246.
- 34) **Laflamme, M.** and Narbonne, G.M. 2008. Competition in a Precambrian World: Palaeoecology of Ediacaran Fronds. *Geology Today*, 24 (5): 182-187.
- 35) **Laflamme, M.**, and Narbonne, G.M. 2008. Ediacaran Fronds. *Palaeogeography, Palaeoclimatology, Palaeoecology*. 258 (3): 162-179.
- 36) **Laflamme, M.**, Narbonne, G.M., Greentree, C. and Anderson, M.M. 2007. The Ediacaran frond *Charnia* from the Avalon Peninsula, Newfoundland, *in* Vickers-Rich, P. & Komarower, P. (eds). *The Rise and Fall of the Ediacaran Biota*. Geological Society, London, Special Publications, 286: 237-257.
- 37) **Laflamme, M.**, Narbonne, G.M., and Anderson, M.M. 2004. Morphometric analysis of the Ediacaran frond *Charniodiscus* from Mistaken Point, Newfoundland, *Journal of Paleontology*, 78: 827-837.

### 1.3.2. PUBLISHED GUIDEBOOKS:

- 1) Narbonne, G.M., **Laflamme, M.**, and Thomas, R. 2012, *When Life Got Big: Glaciation, Oxidation, and the Mistaken Point biota of Newfoundland*, Geological Association of Canada Field Trip Guidebook B1, 78 p.
- 2) Narbonne, G.M. and **Laflamme, M.** 2009. Neoproterozoic glaciation, oxygenation, and the rise of animals in Avalonian Newfoundland. *Field Trip Guide, NASA Astrobiology Institute “Advent of Complex Life” Field Excursion*. 76 pages.
- 3) Narbonne, G.M., Dalrymple, R.W., **Laflamme, M.**, Gehling, J.G. and Boyce, W.D. 2005. *Mistaken Point Biota and the Cambrian of the Avalon*. Field Trip Guide, North American Paleontological Convention, Halifax, NS. 105 pages.

### 1.3.3. Articles Submitted or in review:

- 1) Xiao, S., Narbonne, G.M., Zhou, C., **Laflamme, M.**, Grazhdankin, D.V, Moczyłowska-Vidal, M., and Cui, H. Submitted. *Toward an Ediacaran Time Scale: Problems, Protocols, and Prospects*. Episodes. 34 pages + figures.

- 2) Sperling, E.A., Gehling, J. G., and **Laflamme, M.** In review. Morphometric study of the Ediacaran taxon *Dickinsonia*: insights into growth mode and species-level taxonomy. 35p + 4 figures. Submitted to Journal of Paleontology.
- 3) Darroch, S.A.F., Boag, T., Racicot, R.A., Tweedt, S., Mason, S., Erwin, D.H., and **Laflamme, M.** In review. Evidence for metazoan predation and ‘ecosystem engineering’ in latest Ediacaran strata from southern Namibia. 12 pages + figures and SI. Submitted to Geology.
- 4) Schiffbauer, J.D., Huntley, J.W., O’Neil, G.R., Darroch, S.A.F., **Laflamme, M.**, Cai, Y. in review. The Rise of Animals: Neither Cambrian nor Explosive. Submitted to GSA Today. 21p., +4 figures. **Invited Paper**

### 1.3.5. EDITING:

- 1) Tarhan, L. and **Laflamme, M.** 2015. “Ediacaran Environments and Ecosystems” in Palaeogeography, Palaeoclimatology, Palaeoecology. Volume 434, Pages 1-62 (15 September 2015).
- 2) **Laflamme, M.**, Darroch, S.A.F., and Schiffbauer, J.D. 2014. Reading and writing of the fossil record: preservational pathways to exceptional fossilization. The Paleontological Society Papers Volume 20.
- 3) Schiffbauer, J.D. and **Laflamme, M.** 2012. Lagerstätte through time: An examination of exceptional preservational pathways from the terminal Proterozoic through today. Palaios special issue, vol. 27 (5), p. 275-372.
- 4) **Laflamme, M.**, Schiffbauer, J.D., and Dornbos, S.Q. 2011. Quantifying the Evolution of Early Life: Numerical and Technological Approaches to the Evaluation of Fossils and Ancient Ecosystems. Springer’s Topics in Geobiology, v. 36. ISBN 978-94-007-0680-4

### 1.3.6. SELECTED PAPERS PRESENTED AT MEETINGS \*denotes student

- 1) **Laflamme, M.**, \*Boag, T.H., and Darroch, S.A.F. Spatial and Temporal distribution of the Ediacara Biota. 2<sup>nd</sup> International Congress on Stratigraphy (STRATI 2015) Graz, Austria. July 2015. New. Oral. **Invited Keynote Address.**
- 2) Darroch, S.A.F., and **Laflamme, M.**, New Precambrian Trace Fossils, the End of the Ediacara Biota, and First Mass Extinction of Complex Life. Geological Association of Canada Annual Meeting, Montreal, Canada. May 2015. New. Oral.
- 3) \*Boag, T.H., **Laflamme, M.**, and Darroch, S.A.F. Biodiversity in the Precambrian Fossil Record: Constructing a Digital Database of the Ediacara Biota and Closing the Precambrian-Cambrian Evolutionary Gap. Geological Association of Canada Annual Meeting, Montreal, Canada. May 2015. New. Oral.
- 4) **Laflamme, M.**, Schiffbauer, J.D., and Darroch, S.A.F. Ediacaran soft-tissue preservation. Geological Association of Canada Annual Meeting, Montreal, Canada. May 2015. New. Oral.
- 5) **Laflamme, M.**, Schiffbauer, J.D., and Darroch, S.A.F. Experimental Studies in Ediacaran Preservation. International Palaeontological Congress (IPC), Mendoza, Argentina. September 2014. New. Oral. **Invited Address.**
- 6) **Laflamme, M.** Ediacaran Clades. International Palaeontological Congress (IPC), Mendoza, Argentina. September 2014. New. Oral. **Invited Keynote Address**

- 7) Narbonne, G.M., \*Carbone, C., **Laflamme, M.**, Evolution and Ecology of Ediacaran Assemblages in NW Canada. International Palaeontological Congress (IPC), Mendoza, Argentina. September 2014. New. Oral.
- 8) **Laflamme, M.**, Schiffbauer, J.D., and Darroch, S.A.F. Reading and writing of the fossil record: Preservational pathways to exceptional fossilization. Paleontological Society Short Course, Geological Society of America Annual Meeting, Vancouver, BC. October 2014. New.
- 9) **Laflamme, M.** and Darroch, S.A.F. The Ediacaran Extinction: Lessons from Namibia. Canadian Paleontological Congress, Montreal, Canada. August 2014. New. Oral.
- 10) Locatelli\*, E.R., Chochinov\*, A.V., Krajewski\*, L., Pawar\*, K., Sundrelingam\*, V., Torres\*, J., Tsang\*, B., and **Laflamme, M.** Taphonomic variance between ferns and Medullosan seed ferns from the Mazon Creek lagerstätten. Geological Society of America Annual Meeting Abstracts with Programs, vol. 46, No. 6, p. 330. October 2014. New. Poster.
- 11) Mann\*, A., Nguyen\*, C., and **Laflamme, M.** 2014. The Influence of Taphonomy on Mazon Creek Crustacean Taxonomy. GSA Annual Meeting, Vancouver, British Columbia. October 2015. New. Poster.
- 12) Locatelli\*, E.R., Chochinov\*, A.V., Krajewski\*, L., Pawar\*, K., Sundrelingam\*, V., Torres\*, J., Tsang\*, B., and **Laflamme, M.** Taphonomic variance between ferns and Medullosan seed ferns from the Mazon Creek lagerstätten. Palaeontological Association Annual Meeting. December 2014. New. Poster.
- 13) Locatelli\*, E.R., Chochinov\*, A.V., Krajewski\*, L., Pawar\*, K., Sundrelingam\*, V., Torres\*, J., Tsang\*, B., and **Laflamme, M.** Taphonomic variance between ferns and Medullosan seed ferns from the Mazon Creek lagerstätten. Advances in Earth Science Research Conference. March 2015. New. Poster.
- 14) Boag\*, T., **Laflamme, M.**, Darroch, S.A.F. Insights into the Construction of a Digital Database for the Ediacara Biota. Advances in Earth Science Research Conference. March 2015. New. Talk.
- 15) \*Cotroneo, S., \*Darroch, S.A.F, Schiffbauer, J.D., and **Laflamme, M.** 2014. Isotopic and mineralogical insights on the formation of Mazon Creek Lagerstätten Siderite Concretions. North American Paleontological Congress, Gainesville, FL.
- 16) \*Cotroneo, S., Wortmann, U.G., and **Laflamme, M.** 2014. Diagenetic and Biological Processes Influencing Preservation in Mazon Creek Lagerstätten Siderite Concretions. Northeastern Geobiology Symposium. March 29, 2014. Yale University.
- 17) \*Mason, S. and **Laflamme, M.** 2014. Revisiting the latest Ediacaran small shelly fossils of Namibia. Northeastern Geobiology Symposium. March 29, 2014. Yale University.
- 18) \*Mann, A., \*Nguyen, and **Laflamme, M.** 2014. Taphonomic variance in exceptionally-preserved arthropods from the Mazon Creek Lagerstätte. Northeastern Geobiology Symposium. March 29, 2014. Yale University.
- 19) \*Nguyen, C., \*Mann, A., \*Carter, S., \*Chang, S., \*Ali, Z., and **Laflamme, M.** 2013. Taphonomic Variance in Exceptional Preservation from the Mazon Creek Lagerstätten. GSA, Denver, CO.
- 20) Schiffbauer, J.D., \*Meyer, M., Cai, Y., Hua, H., \*Anderson, E.P., **Laflamme, M.**, \*Darroch, S.A.F., Briggs, D.E.G. and Narbonne, G.M. 2012. Sliding-scale control for three exceptional

taphonomic windows: case studies of fossil kerogenization, pyritization, and aluminosilicification across the Ediacaran-Cambrian transition. GSA, Charlotte, NC.

- 21) \*Darroch, S.A.F., **Laflamme, M.**, and Clapham, M.E. 2012. Population structure of the oldest known macroscopic communities from Mistaken Point, Newfoundland. GSA, Charlotte, NC.
- 22) \*Tweedt, S., and **Laflamme, M.** 2012. Early Evolution of Development in the Ediacaran Macrobiota. GSA, Charlotte, NC.
- 23) \*Atta, C.J., **Laflamme, M.**, Sessa, J.A., \*Tweedt, S.M., Erwin, D.H., 2012. Taphonomic Biases Influencing Exceptionally Preserved Naraoia from the Burgess Shale. GSA, Charlotte, NC.
- 24) **Laflamme, M.**, \*Tweedt, S., \*Darroch, S.A.F., and Erwin, D.H. 2012. Extinction of the Ediacara Biota. GAC-MAC, St. John's, NL.
- 25) Erwin, D.H., **Laflamme, M.** and \*Tweedt, S.M. 2012. The Cambrian Conundrum: the Construction of Animal Biodiversity. GAC-MAC, St. John's, NL. Keynote address.
- 26) \*Darroch, S.A.F., **Laflamme, M.**, Schiffbauer, J.D., and Briggs, D.E.G. 2012. Experimental Formation of a Microbial Death Mask. GAC-MAC, St. John's, NL.
- 27) Erwin, D.H., **Laflamme, M.**, \*Tweedt, S., Sperling, E.A., Pisani, D., and Peterson, K.J. 2011. The Cambrian Conundrum: Early Divergence and Later Ecological Success in the Early History of Animals. Palaeontological Association Annual Meeting, Plymouth, UK.
- 28) \*Darroch, S., **Laflamme, M.**, Schiffbauer, J.D. and Briggs, D.E.G. 2011 Experimental formation of a microbial death mask. Palaeontological Association Annual Meeting, Plymouth, UK.
- 29) **Laflamme, M.**, \*Tweedt, S., \*Darroch, S.A.F., and Erwin, D.H. 2011. Extinction of the Ediacara Biota. GSA, Mineapolis, MN.
- 30) Ghisalberti, M., Jacobs, D.K., \*Gold, D.A., **Laflamme, M.**, Clapham, M.E., Narbonne, G.M., Johnston, D.T., and Summons, R. 2011. Canopy Flow Models Identify a Scaling Advantage for Large Size in the Mistaken Point Rangeomorphs, the World's Oldest Community of Multicellular Eukaryotes. GSA, Mineapolis, MN.
- 31) Xiao, S., Schiffbauer, J.D., **Laflamme, M.**, \*Meyer, M., \*Anderson, E.P., Cai, Y., and Hua, H. 2011. Authigenic Mineralization and Exceptional Preservation. GSA, Mineapolis, MN.
- 32) \*Tweedt, S., Erwin, D.H., **Laflamme, M.**, Sperling, E.A., Pisani, D., and Peterson, K.J. 2011. The Cambrian Conundrum: Early Divergence and Later Ecological Success in the Early History of Animals. GSA, Mineapolis, MN.
- 33) Darroch, S., **Laflamme, M.**, Schiffbauer, J.D. and Briggs, D.E.G. Experimental Formation of Ediacaran-Style Death Mask. GSA, Mineapolis, MN.
- 34) **Laflamme, M.** 2011. Preserving the soft body Precambrian Ediacara biota. Geobiology Symposium XIX: Paleontology – Paleobiology – Geobiology, Department of Earth & Environmental Science, University of Pennsylvania.
- 35) **Laflamme, M.**, Schiffbauer, J.D., Ague, J.J., Narbonne, G.M., and Briggs, D.E.G. 2010. The Role of Microbial Mats in Ash-Based Conception-style Ediacaran Preservation. Palaeontological Association, Ghent, Belgium.
- 36) **Laflamme, M.**, Schiffbauer, J.D., Ague, J.J., Narbonne, G.M., and Briggs, D.E.G. 2010. A Microbial Role in Ash-Based Conception-style Ediacaran Lagerstätte. GSA, Denver, CO.

- 37) **Laflamme, M.**, Schiffbauer, J.D., Narbonne, G.M., and Briggs, D.E.G. 2009. Ediacaran soft-bodied preservation by microbe-particle interactions. SEPM Field Conference: Microbial Mats in Sandy Deposits (Archean to Today), Denver, CO.
- 38) **Laflamme, M.**, Schiffbauer, J.D., Narbonne, G.M., and Briggs, D.E.G. 2009. Ediacaran soft-bodied preservation by microbe-particle interactions. GSA, Portland, OR.
- 39) **Laflamme, M.**, Xiao, S., and Kowalewski, M. 2009. Modular construction in the growth and feeding of the Ediacara biota. North American Paleontology Convention, Cincinnati, OH.
- 40) **Laflamme, M.** 2009. Classifying early life: the ecology of Ediacaran fronds. A World in Transition III: Neoproterozoic Earth History. Princeton University. Invited speaker.
- 41) **Laflamme, M.**, Xiao, S., and Kowalewski, M. 2008. Changes in Feeding Strategies Across the Ediacaran/Cambrian Boundary: Who's New and Who's Missing? GSA, Houston, TX.
- 42) Narbonne, G.M., **Laflamme, M.**, \*Bamforth, E.L., \*Flude, L.I., and Gehling, J.G., 2008, Growth and development of early Ediacarans. 33rd International Geological Congress, Oslo, Norway.
- 43) **Laflamme, M.** and Narbonne, G.M. 2007. A New Multifoliate Rangeomorph Frond from the Ediacaran of Newfoundland and Northwestern Canada. Palaeontological Association, Uppsala, Sweden.
- 44) **Laflamme, M.**, Gehling, J.G., and Droser, M.L. 2007. Three-Dimensional Fronds from the Ediacaran of South Australia. GSA, Denver CO, USA.
- 45) **Laflamme, M.** and Narbonne, G.M. 2007. Tiering in Ediacaran Fronds from Mistaken Point Newfoundland, Atlantic Geosciences Society Annual Meeting and Colloquium, Moncton, NB, Canada. **Rupert H. MacNeil best paper award.**
- 46) **Laflamme, M.** and Narbonne, G.M. 2006. Ediacaran Fronds: A taxonomic Investigation. Adams Club Graduate Student Symposium, Montreal, QC. Canada. Speaking award.
- 47) **Laflamme, M.**, Narbonne, G.M., Greentree, C., Gehling, J.G. and Anderson, M.M. 2005. The Earliest Representatives of the Ediacaran Frond *Charnia*, Mistaken Point Biota, Newfoundland. Fourth annual AESRC conference, p. 20. Ottawa, ON. Canada. **Best Poster Award.**
- 48) **Laflamme, M.**, Narbonne, G.M., and Gehling, J.G. 2002. Morphometric Analysis of *Charniodiscus* from the Neoproterozoic Mistaken Point Formation, Newfoundland, 12th Annual Canadian Paleontology Conference, Program and Abstract, No.12, p. 30. Ottawa, ON. Canada. **T. E. Bolton Best Paper Award.**

### 1.3.7. INVITED LECTURES

- 1) **McMaster University**, November 2015. The Ediacaran Extinction: The First Mass Extinction of Complex life.
- 2) **University of Toronto**, September 2015. Science Literacy Week "Preserving the Oldest Animals".
- 3) **Western University**, January 2015. Department of Geosciences "Extinction of the Ediacara biota".
- 4) **University of Toronto**, January 2015. Department of Geosciences "Extinction of the Ediacara biota"
- 5) **Burlington Public Library** October 2014. "The Dawn of Animals"

- 6) **Princeton University**, April 2014. “Extinction of the Ediacara Biota”.
- 7) **Geological Society of Namibia**, May 2013. “The end of the Ediacara biota: extinction, biotic replacement, or Cheshire Cat?”
- 8) **Gorgon Research Seminar, Invited Keynote Speaker**, January 2013. “The end of the Ediacara biota: extinction, biotic replacement, or Cheshire Cat?”
- 9) **University of Maryland, Department of Geology**, November 2011. “Ediacaran Enigma: Taphonomic Pathways to Preserving and Classifying the Ediacara Biota”
- 10) **Paleontology Society of Washington**, April 2011. “Enigmatic Ediacarans: The Preservation and Phylogeny of Precambrian Problematica”.
- 11) **Department of Geology, Bryn Mawr College**, Bryn Mawr, PA, November 2010. “The Ediacara biota and the early evolution of complex life”.
- 12) **Paleontological Society of Washington**, November 2008. “The lost world of early animal evolution: the Ediacara biota”
- 13) **Department of Geology, University of Toronto**, Canada, January 2008. “The Earth’s first animals and their marine ecosystems: The Ediacara Biota”.
- 14) **Department of Geosciences, University of Wisconsin, Milwaukee**, USA. October 2007. “The Earth’s first animals and their marine ecosystems: The Ediacara Biota”.
- 15) **Geology Department, University of Wisconsin, Oshkosh**, USA. October 2007. “The Earth’s first animals and their marine ecosystems: The Ediacara Biota”.
- 16) **Geology Department, Oxford University**, UK, March 2007. “Ediacaran frond diversity and ecology”.
- 17) **Department of Earth Sciences, Dalhousie University**, Canada, January 2007. “Ediacaran Resource Partitioning at Mistaken Point Newfoundland”.
- 18) **Department of Geology, Acadia University**, Canada, January 2007. “The Ediacara Biota and the emergence of animals”.
- 19) **Department of Geology, Concordia University**, Canada, January 2007. “The Ediacara Biota and the emergence of animals”.
- 20) **Physics Department, Queen's University**, Canada, February 2006. “The Ediacaran experiment and the early evolution of animals”.
- 21) **Biology Department, Bishop’s University**, Canada, October 2005. “Life in a Precambrian ocean: The Ediacaran experiment and the early evolution of animals”.
- 22) **Geology Department, Oxford University**, UK, December 2003. “Morphometric Analysis of the Ediacaran Frond *Charniodiscus* from Mistaken Point, Newfoundland”.

### 1.3.8. LIST OF COURSES TAUGHT (See Teaching Dossier for additional details)

#### 1.3.8.1. Undergraduate Courses Taught

2014-2015 Academic Year

- A. **ERS103H5**: Geology and Public Issues (~200 students)
- B. **ERS313H5**: Sedimentology (~25 students)
- C. **ERS299Y5/ERS399Y5**: Research Opportunity Program (13 students)

2013-2014, Academic Year

- A. **ERS103H5**: Geology and Public Issues (~200 students)
- B. **ERS299Y5/ERS399Y5**: Research Opportunity Program (6 students)

2012-2013 Academic Year

- A. **ERS321: Past and Present Global Change** (~30 students)

### **1.3.8.2. Graduate Courses Taught**

2014-2015

- A. **ESS 3606 Selected Topics in Earth System Evolution:** Devonian ecosystems and the Evolution and diversification of fossil fish
- B. **ESS 3604 Selected Topics in Geology:** Soft-tissue preservation in the fossil record
- C. **ESS 2303 Earth System Evolution** (with Jochen Halfar)

### **1.3.8.3. Theses Supervised**

- A. Ph.D.
  - a. Sara Mason, Revisiting the latest Ediacaran small shelly fossils of Namibia. Start September 2013.
- B. M.Sc.
  - a. Raymond Fong, Differentiating Teeth from Tusks in Fossil Mammals, Start September 2015.
  - b. Thomas Boag, Biogeography of the Ediacara Biota. Completed August 2015.
  - c. Arjan Mann, Placoderm fossils from Ontario. Completed August 2015.
  - d. Sarina Cotroneo, Isotopic and mineralogical insights on the formation of Mazon Creek Lagerstätte Siderite Concretions. Completed August 2014.
- C. NSERC USRA
  - a. Amanda Facciol, Digital fieldwork, 2015
  - b. Arjan Mann, Taphonomy and Taxonomy of Mazon Creek Arthropods, 2014.
- D. B.Sc.
  - a. Hunter Bell, Taphonomic History of “Green Fossils” from the Upper Ordovician Gull River Formation, ERS 470. Start September 2015.
  - b. Rachel Jongsma, The Sedimentological Analysis of the Hoogland Member: Namibia, Africa. ERS 470. Completed April 2015.

### **1.4.1. ADMINISTRATIVE POSITIONS**

- 1) Graduate Admissions Committee, ESS St George, 2015-2016.
- 2) Timetable committee, CPS Earth Sciences, 2014-2015
- 3) Outreach committee, CPS, 2014-2015
- 4) CPS Chair Search Committee, 2014
- 5) Colloquium committee, CPS Earth Sciences, 2013-2014-2015
- 6) Curriculum committee, CPS Earth Sciences, 2013-2014

### **1.4.2 PUBLIC OUTREACH:**

- 1) I have an ERS399 student under my supervision building a **portable laboratory kit** (*i.e.* a laboratory in a suitcase) that focuses on geology-based experiments (global warming, mountain building, and fossilization). These activities targeting Grade 10-12 students will showcase the joys of geology teaching and research at UTM.

- 2) Was interviewed by Mr. Jeff Hecht, on behalf of **New Scientist Magazine**, on my research in Namibia. April 2015. <http://www.newscientist.com/article/dn27415-the-first-complex-life-on-earth-got-eaten-to-extinction.html#.VT5tQCHBzRb>
- 3) Represented the department at the **March Break Open House** in March, 2015.
- 4) Designed and ordered USB sticks for the department. March 2015.
- 5) My laboratory presented our research at a **Professional Development Day for high-school educators** hosted by the Department of Earth Sciences, University of Toronto. February 2015.
- 6) Attended a meeting for Earth Science students organized by the **Association of Professional Geoscientists of Ontario (APGO)**. Information concerning how to make our degree accredited. January 2015.
- 7) Held meetings with Melissa Burger and Sue Prior about **internal outreach initiatives** organized throughout the university. November 2014
- 8) Public lecture titled “The Dawn of Animals” for the **Burlington Public Library**. October 2014.
- 9) **Guest moderator** at the screening of the climate change movie “Disruption”, held at The Franklin House, 263 Queen St S, Mississauga, ON, Canada. Led discussions, answered audience questions. September 2014.
- 10) Represented the department at the **Fall Ontario Universities Fair** September 2014.
- 11) Led a **team-building geology field trip** to Niagara Falls. September 2014.
- 12) Represented the department at the **Head Start initiative** in August 2014. Gave a lecture to incoming students on the benefits of earth science education.
- 13) **Interviewed by Elizabeth Newbern for her Scienceline news article on my research**. March 2014. <http://scienceline.org/2014/03/creatures-of-the-ediacaran/>
- 14) **Volunteer: “Café Scientifique” event, Toronto Science Festival**, September 2013. Cafe Scientifique is an opportunity for members of the public to meet and greet with scientists about science in an informal setting. I guided a discussion panel dealing with the topic of “life in the Universe”.
- 15) **Volunteer: “Teen Career Exploration Fair”, Oakville Public Library**, September 2013. This job fair allowed teens to meet with professionals and discuss their future careers. I was particularly questioned about graduate school, and academia in general.
- 16) **Instructor: National Science Resources Center (NSRC) 2012 Biodiversity Week**, Smithsonian Institution National Museum of Natural History, June 2012. Lecture on the Ediacaran and Burgess Shale collections at the NMNH for science teachers (grades 2-12). Included hands-on activities with fossils and theoretical insights concerning modern and ancient biodiversity.
- 17) **Volunteer: “Night at the Museum” and “Meet a scientist” events**, Peabody Museum of Natural History, Feb. 2009, 2010. Assisted in the organization of the Peabody events, which focused on teaching natural history to members of the New Haven community. I led behind the scenes tours of the Peabody Natural History fossil collections and manned a booth where children could meet and interact with a real scientist.
- 18) **Scientific advisor: “Evolve” produced by the History Channel**. Feb. 2008. Appeared in the episode featuring the evolution of feeding strategies, “Guts”. I was involved with script writing, fact checking, and appeared in the episode as well.



- 19) **Scientific advisor: Interpretive centre, Mistaken Point Ecological Reserve.** Aug. 2006. Critiqued the exhibits and donated several of my figures and photographs to the project, which are presently on display.
- 20) **Scientific advisor: Research Poster,** Aug. 2005. As part of an ongoing outreach program in Newfoundland, I made a detailed scientific poster (Fossils from Upper Island Cove and Spaniard's Bay) which was presented to local high schools of Spaniard's Bay.
- 21) **Scientific advisor: "Stone diaries" by Wayne Grady, Canadian Geographic,** Jan-Feb 2004. Popular scientific article on our research at Mistaken Point. I was involved with fact checking and appeared in the article as well.