

Wilder Greenman

Postdoctoral researcher
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Education

- Ph.D.** Department of Earth and Planetary Science, McGill University. 2018-2022. Thesis: Reconstructing the depositional history of the terminal Mesoproterozoic Bylot basins of northeastern Laurentia. Advisor: Galen P. Halverson.
- M.Sc.** Department of Earth Science, Carleton University. 2015-2017. Thesis: Characterization of a 1-billion-year-old carbonate ramp in the Brock Inlier, Arctic Canada. Advisor: Robert H. Rainbird.
- B.Sc.** Honours double major in Biology and Geology. 2011-2015. Department of Earth Sciences, University of Ottawa. Honours thesis project: Investigation into the Microbial Diversity of Brines with Methane Production on Anticosti Island, Quebec, Canada. Advisor: Danielle Fortin.

Professional experience

- 2014-2015 GIS technician and field assistant for the Geological Survey of Canada (Natural Resources Canada), focusing on Precambrian sedimentology in the Brock Inlier (Northwest Territories) and in the Elu and Kilohigok basins (Nunavut). My primary responsibilities were to collect and manage GIS data over two summers of fieldwork.

Awards

- 2021-2022 Eric Mountjoy Fellowship - \$9500
- 2019-2021 W. Garfield Weston award in Northern Research - \$50 000
- 2018 Graduate Mobility Award - \$4000
- 2018 Eric Mountjoy Fellowship - \$7500
- 2016-2017 Al Donaldson Award in Precambrian Geology - \$3307
- 2015-2016 Al Donaldson Award in Precambrian Geology - \$2445

Peer Reviewed Publications

- (9) **Greenman, J.W.**, Rooney, A.D., Patzke, M., Ielpi, A., Halverson, G.P., (2021) Re-Os geochronology highlights widespread latest Mesoproterozoic (ca. 1090-1050 Ma) intracratonic basin development of Laurentia. *Geology*, v. 49(7): 779-783.
<https://doi.org/10.1130/G48521.1>
- (8) Patzke, M., **Greenman, J.W.**, Ielpi, A., Halverson., G.P., (2021) The initiation of the Mesoproterozoic Bylot basins (Nunavut, Arctic Canada) as recorded in the Nyeboe Formation, Fury and Hecla Group. *Journal of Sedimentary Research*, v. 91(11): 1166-1187.
<https://doi.org/10.2110/jsr.2020.185>
- (7) Hoffman, P.F., Halverson, G.P., Schrag, D., Higgins, J.A., Domack, E.W., Macdonald, F.A., Pruss, S.B., Blattler, C.L., Crockford, P.W., Hodgkin, E.B., Bellefroid, E.J., Johnson, B.J., Hodgskiss, M.S.W., Lamothe, K.G., LoBianco, S.J.C., Busch, J.F., Howes, B.J., **Greenman, J.W.**, Nelson, L.L., (2021) Snowballs in Africa: sectioning a long-lived Neoproterozoic carbonate platform and its bathyl foreslope (NW Namibia). *Earth-Science Reviews*, v. 219: 231 p. <https://doi.org/10.1016/j.earscirev.2021.103616>
- (6) **Greenman, J.W.**, Rainbird, R.H., Turner, E.C., (2020b) High-resolution correlation between contrasting early Tonian carbonate successions in NW Canada highlights pronounced global carbon isotope variations. *Precambrian Research*, v. 346 (105816): 17 p.
<https://doi.org/10.1016/j.precamres.2020.105816>
- (5) Lamothe, K.G., Hoffman, P.F., **Greenman, J.W.**, Halverson., G.P., (2019) Stratigraphy and isotope geochemistry of the pre-Sturtian Ugab Subgroup, Otavi/Swakop Group, northwestern Namibia. *Precambrian Research*, v. 332 (105387): 11 p.
<https://doi.org/10.1016/j.precamres.2019.105387>
- (4) Loron, C.C., Rainbird, R.H. Turner, E.C., **Greenman, J.W.**, Javaux, E.J., (2019) Organic-walled microfossils from the late Mesoproterozoic to early Neoproterozoic lower Shaler Supergroup (Arctic Canada): diversity and biostratigraphic significance. *Precambrian Research*, v. 321. <https://doi.org/10.1016/j.precamres.2018.12.024>
- (3) Loron, C.C., Rainbird, R.H. Turner, E.C., **Greenman, J.W.**, Javaux, E.J., (2018) Evidence for earlier Proterozoic eukaryotic diversification and predation in Arctic Canada. *Emerging Topics in Life Sciences*, v. 2(2) 247-255. <https://doi.org/10.1042/ETLS20170153>
- (2) Ielpi, A., Rainbird, R.H., **Greenman, J.W.**, Creason, C.G., (2017) . Geology of Elu Inlet and Melville Sound, Nunavut, Arctic Canada. *Journal of Maps*, v. 13(2), 124-132.
<https://doi.org/10.1080/17445647.2016.1268981>

In review

- (1) **Greenman, J.W.**, dos Santos, A., Patzke, M., Gibson, T., Ielpi, A., Halverson., G.P., (in review) A tectonostratigraphic framework for the late Mesoproterozoic Bylot basins of Laurentia. Submitted to the *Geological Society of London Special Publications* on June 9th, 2021: S-21-00104-3.

Published Technical Reports

- (10) **Greenman, J.W.**, Patzke, M. Halverson., G.P., Ielpi, A., (2020a). Updated stratigraphy of the Fury and Hecla Group of Melville Peninsula and northwestern Baffin Island, Nunavut; in Summary of Activities 2019, Canada Nunavut Geoscience Office, p. 37-50.
- (9) Lebeau, L.E., Russer, M., Therriault, I., Bovington, P.J., Dufour, F., **Greenman, J.W.**, Patzke, M., (2020) Regional bedrock mapping of the Jungerson River area, northwestern Baffin Island, Nunavut; *in* Summary of Activities 2019, Canada-Nunavut Geoscience Office, p. 11-26.
- (8) **Greenman, J.W.**, Patzke, M., Ielpi, A., Halverson., G.P., (2018). Refinement of the stratigraphy of the late Mesoproterozoic Fury and Hecla Basin, Baffin Island, Nunavut, with a specific focus on the Agu Bay and Autridge formations; *in* Summary of Activities 2018, Canada-Nunavut Geoscience Office, p. 85-96.
- (7) **Greenman, J.W.**, Rainbird, R.H., (2018) Stratigraphy of the upper Nelson Head, Aok, Grassy Bay, and Boot Inlet formations in the Brock Inlier, Northwest Territories (NTS 97-A, D); Geological Survey of Canada, Open File 8394, 63 p.
- (6) Patzke, M., **Greenman, J.W.**, Ielpi, A., Halverson, G.P., (2018) Sedimentology of the sandstone-dominated units in the Fury and Hecla Basin, northern Baffin Island, Nunavut; *in* Summary of Activities, Canada-Nunavut Geoscience Office, p. 75-84.
- (5) Steenkamp, H.M., Bovington, P.J., Dufour, F., Genereux, C.-A., **Greenman, J.W.**, Halverson, G.P., Ielpi, A., Patzke, M., Tinkham., D.K., (2018) New regional mapping of Precambrian rocks north of Fury and Hecla Strait, northwestern Baffin Island, Nunavut; *in* Summary of Activities 2018, Canada-Nunavut Geoscience Office, p. 47-62.
- (4) Hoffman, P.F., Lamothe., K., **Greenman, J.W.**, (2018) Stratigraphic investigations of the Neoproterozoic Otavi/Swakop Group in the southern Kunene Region. Communications of the Geological Survey of Namibia, 20, p. 100-113.
- (3) Ielpi, A.I., Michel, S., **Greenman, J.W.**, Lebeau, L.E., (2017) Stratigraphy, gamma-ray spectrometry and uranium prospectivity of the Kilohigok paleosol, Bear Creek Hills, western Nunavut; *in* Summary of Activities 2017, Canada-Nunavut Geoscience Office, p. 37-48.
- (2) Rainbird, R.H., Craven, J.A., Turner, E.C., Jackson, V.A., Fischer, B.J., Bouchard, M., **Greenman, J.W.**, and Gibson, T. (2016). Reconnaissance geological mapping, stratigraphy and magnetotelluric survey of northern Brock Inlier, Northwest Territories; Geological Survey of Canada, Open File 7955, 16 p.
- (1) Ielpi, A., Rainbird, R.H., **Greenman, J.W.**, and Creason C.G. (2015). The 1.9 Ga Kilohigok Paleosol, Hope Bay, Nunavut: stratigraphy, gamma- ray spectrometry, basin analysis; *in* Summary of Activities 2015, Canada-Nunavut Geoscience Office, p. 1-10.

Presentations

Invited Seminars

2022 **Greenman, J.W.** Decoding the sedimentary record of early eukaryotes in Arctic Canada. Invited seminar scheduled at the Department of Earth and Environmental Sciences at Dalhousie University in Halifax, Nova Scotia. February 3rd, 2022.

Greenman, J.W. Decoding the sedimentary record of early eukaryotes in Arctic Canada. Invited seminar scheduled for the Atlantic Science Hour talk at the Geological Survey of Canada, Dartmouth, Nova Scotia. March 9th, 2022.

2019 **Greenman, J.W.** Using Re-Os geochronology to reconstruct the geologic record of the Bylot basins. Presented to the Summons Geobiology and Astrobiology Lab at the Massachusetts Institute of Technology in Boston, Massachusetts.

Greenman, J.W. Paleoenvironmental analysis using Fe-speciation of black shale units from the late Mesoproterozoic Fury and Hecla Group, arctic Canada. Presented at the 2019 Fury and Hecla Workshop at the Geological Survey of Canada in Ottawa, Ontario.

2018 **Greenman, J.W.** Thematic research on black shales and carbonates from the Fury and Hecla Group. Presented at the Fury and Hecla Workshop at the Geological Survey of Canada in Ottawa, Ontario.

Greenman, J.W., Rainbird, R. H., Dix, G., Turner, E. C. Carbon isotopic variation and stratigraphy in 1.0 Ga carbonate shelf succession from the Brock Inlier: Northwest Territories, Canada. Presented at 2017 Agouron Workshop in Kingston, Ontario.

Selected conference presentations (indicates presenter)*

2021 **Greenman, J.W.***, dos Santos, A., Patzke, M., Gibson, T., Ielpi, A., Halverson, G.P. A tectonostratigraphic framework for the late Mesoproterozoic Bylot basins of Laurentia. Virtual poster presented at 2021 hybrid GAC/MAC conference in London, Ontario.

Patzke, M*, **Greenman, J.W.**, Halverson, G.P., Rainbird, R.H., Ielpi, A. Detrital zircon provenance of the Mesoproterozoic Fury and Hecla Group: Refining a tectono-depositional model for the Bylot basins (Arctic Laurentia). Virtual talk presented at 2021 hybrid GAC/MAC conference in London, Ontario.

Halverson, G.P*, Sullivan, E., **Greenman, J.W.**, Perrot, M.G., Davies, J.H.F.L., Rainbird, R.H. Application of Bayesian Modelling to Age Calibration of Stenian to Tonian in Northern Laurentia. Virtual talk presented at 2021 hybrid GAC/MAC conference in London, Ontario.

- Greenman, J.W.***, dos Santos, A.D., Patzke, M., Ielpi, A., Halverson, G.P. Incorporating the Thule Supergroup into the evolving tectonostratigraphic framework of the Mesoproterozoic Bylot basins. Poster presented at 2021 Northeast Geobiology Symposium virtual conference.
- 2020 **Greenman, J.W.***, Rooney, A.D., Patzke, M., Ielpi, A., Halverson, G.P. Re-Os geochronology highlights widespread latest Mesoproterozoic (ca. 1090-1050 Ma) intracratonic basin development on Laurentia. Talk presented at 2020 GSA virtual conference.
- 2019 **Greenman, J.W.***, Wong, W., Patzke, M., Gibson, T.M., Ielpi, A., Halverson, G.P. Paleoenvironment analysis and geochronology of black shale units from the late Mesoproterozoic Fury and Hecla Group, arctic Canada. Presented at 2019 GAC-MAC conference in Quebec City, Quebec.
- Patzke, M*, Ielpi, A., **Greenman, J.W.**, Halverson, G.P. Sedimentology of sandstone-dominated units in the Mesoproterozoic Fury and Hecla Group (Nunavut, Canada). Presented at 2019 GAC/MAC conference in Quebec city, Quebec.
- Greenman, J.W.***, Wong, W., Halverson, G.P. Coupled paleoenvironmental and redox state analysis of 1 billion-year-old (?) black shale units from the Fury and Hecla Group, Nunavut. Poster presented at 2019 Geobiology Society conference in Banff, Alberta.
- Greenman, J.W.***, Wong, W., Halverson, G.P. Coupled paleobiological and paleoecological studies from 1 billion-year-old black shale units of the Fury and Hecla Group, Nunavut. Talk presented at 2019 GEOTOP student conference in Orford, Quebec.
- 2018 **Greenman, J.W.** (2018) Characterization of a ~1 billion-year-old carbonate ramp in the Brock Inlier, Arctic Canada. Talk presented at the 2018 GEOTOP student conference in La Malbaie, Quebec.
- Ielpi, A*, Steenkamp, H.M., Halverson, G.P., Tinkham, D.K., Patzke, M., **Greenman, J.W.**, Bovingdon, P., Dufour, F., G  n  reux, C.-A. The Fury and Hecla Geoscience Project: Overview of the 2018 regional bedrock mapping and thematic research. Talk presented at the 2018 Yellowknife Geoscience Forum in Yellowknife, Northwest Territories.
- 2017 **Greenman, J.W.***, Rainbird, R. H., Dix, G., Turner, E. C. Stratigraphy, chemostratigraphy and paleoenvironmental analysis of a 1.0 Ga carbonate shelf succession: The Brock Inlier, Northwest Territories, Canada. Talk presented at 2017 GAC-MAC in Kingston, Ontario.

- Loron, C.*, Rainbird, R.H., **Greenman, J.W.**, Turner, E.C., Javaux, E. An exquisitely diverse assemblage of organic-walled microfossils from the Proterozoic of Arctic Canada and implications for the early evolution of Eukaryotes. Talk presented at 2017 GAC/MAC conference in Kingston, Ontario.
- 2016 **Greenman, J.W.***, Rainbird, R. H., Dix., G. Stratigraphy, chemostratigraphy and paleoenvironment analysis of a ~1.0 Ga carbonate shelf succession from the Brock Inlier, Northwest Territories, Canada. Talk presented at 2016 AESERC student conference at Carleton University, Ottawa, Ontario.
- 2015 Daoust, P*., Desrochers, A., Clark, I.D., **Greenman, J.W.**, Fortin, D. (2015). Paleozoic brine and gas seeps on Anticosti Island: impacts for developing unconventional hydrocarbon resources. Poster at AGU, CGU, GAC/MAC joint meeting in Montreal, Quebec.

Fieldwork Experience

- 2019 **Field party leader** for the Thule Basin Geoscience Project. Led group of four PhD students and one geologist from the Geological Survey of Canada on research expedition to northwest Greenland. The purpose of this geological field work was to measure stratigraphic sections and collect samples in the Thule Basin of northwestern Greenland (August, 2 weeks).
- Bedrock mapper** with Fury and Hecla Geoscience Project led by the Canada Nunavut Geoscience Office on northwestern Baffin Island (July, 4 weeks).
- Field assistant** with McGill University PROPS Group, in the Ogilvie Mountains, Yukon. (June, 2 weeks).
- 2018 **Bedrock mapper** with Fury and Hecla Geoscience Project led by the Canada Nunavut Geoscience Office on northwestern Baffin Island (July-August, 5 weeks).
- Field assistant** for Paul Hoffman in Kunene Region of Namibia working on carbonates of the Otavi Group. (May, June, July, 6 weeks).
- 2017 **Field assistant** for Laurentian University, focusing on Proterozoic Passive Margin Sequence in Bathurst Inlet area, Nunavut. (June-July, 2 weeks) .
- 2015/ **Field assistant** for Geological Survey of Canada, focusing on Precambrian stratigraphy in
2014 the Brock Inlier, Northwest Territories and Elu and Kilohigok basins, Nunavut. (June-August for two summers).

Teaching Experience

- 2020 **Substitute lecturer** for EPSC233 - Earth and Life History - two lectures
- 2018-2019 **Undergraduate supervision:** Will Wong - Fe speciation of shales from the Fury and Hecla Basin.
- 2015-2021 **Teaching Assistant** – listed below

Department of Earth and Planetary Sciences, McGill University

- 2021 EPSC 355 – Sedimentary Geology
- 2020 EPSC 233 – Earth and Life History
 EPSC 181 – Environmental Geology
- 2019 EPSC 550 – Geomicrobiology
 EPSC 181 – Environmental Geology
- 2018 EPSC 355 – Sedimentary Geology
 EPSC 181 – Environmental Geology

Department of Earth Sciences, Carleton University

- 2017 EARTH 2406 – Geology and Map Interpretation
- 2016 EARTH 2404 – Engineering Geoscience
 EARTH 1009 – Earth System through Time
- 2015 EARTH 2314 – Stratigraphy and Sedimentary Geology

Lab Experience

Nd isotope geochemistry
Trace element analysis
Re-Os geochronology
Stable carbon isotope analysis
Lapidary trim saw
Remote database management
Compound Microscopy
Polarizing Microscopy
Light Refracting Microscopy
DNA Extractions
PCR Gel Electrophoresis

Service

- 2019 Co-organizer of McGill's Earth and Planetary Science Research Symposium.
- 2015-2017 Co-founder of the Ottawa-Carleton Geoscience Center's American Association of Petroleum Geologists (AAPG) chapter and vice president.

Training

2021	WHMIS Training
2019	Wilderness and first aid training
2014	Ganfeld DataBase Training
2014	Firearms safety training
2014	Helicopter Awareness Training
2013	Small Vehicle Training with city of Ottawa

Languages

Spoken: English and French
Written: English

References

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