

Christopher K. West

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Curriculum vitae

PERSONAL DETAILS

Citizenship: Canadian

Home address: 10410 114 Ave NW, Edmonton, AB, T5G 0K9

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EDUCATION

- 2013 – Nov. 2019 **Ph.D.** Geological Sciences, University of Saskatchewan
The late Paleocene to early Eocene polar forests of Canada: a paleobotanical reconstruction of climate and ecosystems.
Supervisors: Dr. David R. Greenwood & Dr. James F. Basinger
- 2009 – 2013 **BSc. High Honours**, Palaeobiology, University of Saskatchewan
- 2003 – 2008 **BSc.** Geography (Earth Science), University of Winnipeg

PROFESSIONAL EXPERIENCE

- Oct. 2019 – Current Postdoctoral Fellow, Department of Earth and Atmospheric Sciences, University of Alberta
- Nov. 2019 – Sept. 2020 Postdoctoral Fellow, Department of Geological Sciences, University of Saskatchewan

SCHOLARSHIPS, AWARDS, AND ACADEMIC HONOURS

- 2020 Governor General's Gold Medal
- 2018 NSERC CGS-D Alexander Graham Bell Graduate Scholarship (2018–2019) \$35,000
- 2018 Botanical Society of America Conference Travel Grant \$3300
- 2017 University of Saskatchewan Global Ambassador Award (Visiting Researcher Grant) \$5000
- 2017 Geological Society of America Student Research Grant \$1660
- 2017 Northern Scientific Training Program award (NSTP) \$4000
- 2016 International Organisation of Palaeobotany Conference Travel Award \$5400
- 2016 NSERC PGS–D Doctoral Scholarship (2016–2018) \$42,000
- 2015 University of Saskatchewan Dean's Scholarship (2015–2016, 2019) \$28,000
- 2014 Western Inter-University Geoscience Conference: Best Overall Presentation \$500
- 2013 University of Saskatchewan Graduate Teaching Fellowship (2013–2015) \$56,000
- 2013 Arts & Science Convocation Award \$250

PEER REVIEWED PUBLICATIONS

10. **West, C.K.**, Greenwood, D.R., Reichgelt, T., Lowe, A.J., Vachon, J.M., and Basinger, J.F. **2020**. Paleobotanical proxies for early Eocene climates and ecosystems in northern North America from mid to high latitudes. *Climate of the Past*, 4: 1387–1410, <https://doi.org/10.5194/cp-2020-32>.
9. Schlanser, K.M., Diefendorf, A.F., **West, C.K.**, Greenwood, D.R., Basinger, J.F., Meyer, H.W., Lowe, A.J. and Naake, H.H., **2020**. Conifers are a major source of sedimentary leaf wax n-alkanes when dominant in the landscape: Case studies from the Paleogene. *Organic Geochemistry*, p.104069.
8. Schlanser, K.M., Diefendorf, A.F., Greenwood, D.R., Mueller, K.E., **West, C.K.**, Lowe, A.J., Basinger, J.F., Currano, E.D., Flynn, A.G., Fricke, H.C., Geng, J., Meyer, H.W., and Peppe, D.J. **2020**. On geologic timescales, plant carbon isotope fractionation responds to precipitation similarly to modern plants and has a small negative correlation with pCO₂. *Geochimica et Cosmochimica Acta*, 270: 264–281.
7. **West, C.K.**, Greenwood, D.R., and Basinger, J.F. **2019**. The late Paleocene and early Eocene Arctic megaf flora of Ellesmere and Axel Heiberg islands, Nunavut, Canada. *Palaeontographica Abteilung. B*, 300 (1–6): 47–163.
6. Lowe, A.J., Greenwood, D.R., **West, C.K.**, Galloway, J.M., Sudermann, M., and Reichgelt, T., **2018**. Plant community ecology and climate on an upland volcanic landscape during the Early Eocene Climatic Optimum: McAbee Fossil Beds, British Columbia, Canada. *Palaeogeography, Palaeoclimatology, Palaeoecology*, 511: 433–448.
5. Lowe, A.J., **West, C.K.**, and Greenwood, D.R. **2018**. Volcaniclastic lithostratigraphy and paleoenvironment of the lower Eocene McAbee fossil beds, Kamloops Group, British Columbia, Canada. *Canadian Journal of Earth Sciences*. 55 (8): 923–934.
4. Reichgelt, T., **West, C.K.**, and Greenwood, D.R. **2018**. The relation between global palm distribution and climate. *Scientific Reports*, 8 (1): 4721.
3. Greenwood, D.R. and **West, C.K.**, **2017**. A fossil coryphoid palm from the Paleocene of western Canada. *Review of Palaeobotany and Palynology*, 239: 55–65.
2. Gushulak, C.A.C., **West, C.K.**, and Greenwood, D.R. **2016**. Paleoclimate and seasonality of the Early Eocene McAbee megaf flora, Kamloops Group, British Columbia. *Canadian Journal of Earth Sciences*, 53 (6): 591–601.
1. **West, C.K.**, Greenwood, D.R., and Basinger, J.F. **2015**, Was the Arctic Eocene ‘rainforest’ monsoonal? Estimates of seasonal precipitation from early Eocene macrofloras from Ellesmere Island, Nunavut. *Earth and Planetary Science Letters*, 427: 18–30.

IN REVIEW

- Sudermann, M., Galloway, J.M., Greenwood, D.R., **West, C.K.**, and Reinhardt, L. *Post review, revision requested*. Palynostratigraphy of the lower Paleogene Margaret Formation at Stenkul Fiord, Ellesmere Island, Nunavut, Canada. *Submitted to Palynology*.
- Greenwood, D.R., **West, C.K.**, and Basinger, J.F., *In review*. The Miocene Red Lake macroflora, Deadman River Formation (Chilcotin Group), Interior Plateau, British Columbia, Canada. *Submitted to Acta Palaeobotanica. Accepted with minor revisions*.

Lutz, R., von Gosen, W., Lückge, A., Blumenberg, M., Galloway, J.M., **West, C.K.**, Sudermann, M., and Dolezych, M. *In review*. Geochemical indications for the Paleocene-Eocene Thermal Maximum (PETM) and the Eocene Thermal Maximum 2 (ETM-2) hyperthermals in terrestrial sediments of the Canadian Arctic. *Submitted to the Geological Society of America Bulletin*.

IN PREPARATION

West, C.K., Greenwood, D.R., Sudermann, M., Reinhardt, L., Galloway, J.M., and Basinger, J.F. *In prep*. High Arctic forest diversity and floristic change during early Eocene hyperthermal events. *Planned submission to Palaeogeography, Palaeoclimatology, Palaeoecology*.

TECHNICAL DOCUMENTS

West, C.K., Lowe, A.J., Galloway, J.M., Sudermann, M., and Greenwood, D.R. **2018**. Summary of Field Activities and Initial Results: McAbee Fossil Bed Heritage Site. Permit No. 2017-01 (issued to D.R Greenwood). Prepared for the Ministry of Forests, Lands, and Natural Resource Operations of British Columbia.

Galloway, J.M., Reinhardt, L., von Gosen, W., Piepjohn, K., Dolezych, M., Lückge, A., Gaedicke, C., Sudermann, M., **West, C.K.**, and Greenwood, D.R. **2018**. Multidisciplinary study of Paleogene-Neogene strata on Ellesmere Island, Nunavut: GEM-2 Western Arctic Project, Pearya Terrane activity. Prepared for the Geological Survey of Canada.

CONFERENCE ABSTRACTS

* *presenter*

24. **West, C.K.*** and Reichgelt, T. **2020**. Cenozoic temperature and precipitation trends from fossil leaf morphology. *Midcontinent Paleobotanical Colloquium – Virtual Conference, Seattle, WA. Poster presentation*.
23. **West, C.K.***, Greenwood, D.R., Sudermann, M., Reinhardt, L., Galloway, J.M., and Basinger, J.F. **2019**. High Arctic forest diversity and floristic change during early Eocene hyperthermal events. *Geological Society of America Annual Meeting, Phoenix AZ. Oral presentation*.
22. Schlanser, K.M.*, Diefendorf, A.F., **West, C.K.**, Greenwood, D.R., and Basinger, J.F. **2019**. Evidence for conifer-derived leaf wax N-Alkanes in Paleogene sediments and implications for their hydrogen and carbon isotopes. *Geological Society of America Annual Meeting, Phoenix AZ. Oral presentation*.
21. Sudermann, M.*, Galloway, J.M., Greenwood, D.R., **West, C.K.**, and Reinhardt, L. **2019**. Palynostratigraphy of the lower Paleogene Margaret Formation at Stenkul Fiord, Ellesmere Island, Nunavut, Canada. *Geological Society of America Annual Meeting, Phoenix AZ. Oral presentation*.
20. Sudermann, M.*, Greenwood, D.R., **West, C.K.**, Galloway, J.M., and Reinhardt, L. **2019**. Palynology of Arctic hyperthermal (PETM and ETM-2) vegetation from the early Paleogene Margaret Formation at Stenkul Fiord, Ellesmere Island, Nunavut, Canada. *European Geosciences Union General Assembly, Vienna, Austria. Poster presentation*.
19. Reinhardt, L.*, Lückge, A., Galloway, J.M., Sudermann, M., **West, C.K.**, Dolezych, M., and von Gosen, W. **2019**. Early Eocene hyperthermals recorded in terrestrial sediments of the Canadian High Arctic (Stenkul Fiord, Ellesmere Island, Nunavut): indications

- from new carbon isotope data. *European Geosciences Union General Assembly, Vienna, Austria. Poster presentation.*
18. **West, C.K.***, Greenwood, D.R., Lowe, A.J., Sudermann, M., Vachon, J., and Basinger, J.F. **2018.** Early Eocene climates from mid-latitude upland and high-latitude Arctic environments in Canada: insights from palaeobotanical proxies. *American Geophysical Union Fall Meeting, Washington D.C. Poster presentation.*
 17. Sudermann, M.*, Greenwood, D.R., **West, C.K.**, Galloway, J.M., and Reinhardt, L. **2018.** Palynostratigraphy of the early Paleogene Margaret Formation at Stenkul Fiord, Ellesmere Island, Nunavut, Canada: a comprehensive microfossil record of Arctic hyperthermal (ETM-2) vegetation. *American Geophysical Union Fall Meeting, Washington D.C. Poster presentation.*
 16. Padgett, A.*, Hyland, E.G., and **West, C.K.** **2018.** Carbonate Clumped Isotope-derived Climate Records of the Early Paleogene from Ellesmere Island and Axel Heiberg Island, Nunavut, Arctic Canada. *American Geophysical Union Fall Meeting, Washington D.C. Poster presentation.*
 15. Sudermann, M.*, Greenwood, D.R., **West, C.K.**, Galloway, J.M., and Reinhardt, L. **2018.** An early Paleogene pollen record of Arctic vegetation from the Margaret Formation, Stenkul Fiord, Ellesmere Island, Nunavut. *The Canadian Paleontology Conference, Saskatoon, Saskatchewan, Canada. Oral presentation.*
 14. **West, C.K.***, Greenwood, D.R., and Basinger, J.F. **2018.** The Early Paleogene Forests of Ellesmere and Axel Heiberg Islands, Nunavut, Canada. *The Canadian Paleontology Conference, Saskatoon, Saskatchewan, Canada. Oral presentation.*
 13. **West, C.K.***, Greenwood, D.R., and Basinger, J.F. **2018.** The late Paleocene and early Eocene Arctic megaf flora of Ellesmere and Axel Heiberg islands, Nunavut, Canada. *European Paleobotany and Palynology Conference X, Dublin, Ireland. Oral presentation.*
 12. Reinhardt, L.*, von Gosen, W., Dolezych, M., Galloway, J.M., Lückge, A., Sudermann, M., **West, C.K.**, and Schmitz, M. **2018.** Early Cenozoic Eureka deformation: dating of syn-sedimentary movements at Stenkul Fiord (Ellesmere Island, Nunavut, Canada). *International Conference on Arctic Margins, Stockholm, Sweden. Oral presentation.*
 11. Lückge, A.*, Reinhardt, L., von Gosen, W., Sudermann, M., Greenwood, D.R., **West, C.K.**, and Galloway, J.M. **2018.** The Eocene thermal Maximum 2 (ETM-2) in a terrestrial section in the Canadian High Arctic (Stenkul Fiord, Ellesmere Island, Nunavut). *European Geosciences Union General Assembly, Vienna, Austria. Poster presentation.*
 10. Lowe, A.J.*, **West, C.K.**, Sudermann, M., and Greenwood, D.R. **2017.** Millennial-scale plant community and climate dynamics at the onset of the Early Eocene Climatic Optimum, McAbee Fossil Beds, British Columbia, Canada. *Geological Society of America Annual Meeting, Seattle WA. Oral presentation.*
 9. Sudermann, M.*, Galloway, J.M., Greenwood, D.R., **West, C.K.**, and Reinhardt, L. **2017.** A palynological investigation of the Arctic late Paleocene–early Eocene Margaret Formation at Stenkul Fiord, Ellesmere Island, NU, Canada. *Climatic & Biotic Events of the Early Paleogene, Salt Lake City, UT. Poster presentation.*
 8. Lowe, A.J.*, **West, C.K.**, Sudermann, M., and Greenwood, D.R. **2017.** Plant community and climate dynamics at the onset of the Early Eocene Climatic Optimum, McAbee Fossil Beds, British Columbia. *Climatic & Biotic Events of the Early Paleogene, Salt Lake City, UT. Poster presentation.*
 7. **West, C.K.***, Greenwood, D.R., Sudermann, M., Reinhardt, L., and Basinger, J.F. **2017.**

- Polar heat: evaluating the impact of an early Eocene hyperthermal event on Arctic forests from Ellesmere Island, Nunavut, Canada. *Climatic & Biotic Events of the Early Paleogene, Salt Lake City, UT. Oral presentation.*
6. **West, C.K.***, Greenwood, D.R., Peppe, D.J., and Basinger J.F. **2016**. The Ellesmere Island flora: a diverse assemblage of early Eocene flora from the Canadian Arctic. *International Organisation of Paleobotany Conference, Salvador, Brazil. Oral presentation.*
 5. **West, C.K.***, Greenwood, D.R., and Basinger, J.F. **2014**. Floristic change and diversity using fossil macroflora from early Paleogene (Ca. 59-50 Ma) Arctic rainforests. *Geological Society of America Annual Meeting, Vancouver, B.C INVITED oral presentation.*
 4. **West, C.K.*** **2014**. Polar Monsoons? An Early Eocene climate reconstruction of a high Arctic 'rainforest' from Ellesmere Island. *Western Inter-University Geoscience Conference, Calgary, AB. Oral presentation.*
 3. **West, C.K.***, Greenwood, D.R., and Basinger, J.F. **2013**. Was the Arctic Eocene 'rainforest' monsoonal? Estimates of seasonal precipitation from early Eocene macrofloras from Ellesmere Island, Nunavut. *Geological Society of America Annual Meeting, Denver, CO. Oral presentation.*
 2. **West, C.K.*** **2013**. Early Eocene Arctic seasonal precipitation reconstructed using fossil leaves from Ellesmere Island, Nunavut. *Prairie University Biology Symposium, Winnipeg, MB. Poster presentation.*
 1. Greenwood, D.R.*, **West, C.K.**, and Basinger, J.F. **2012**. Arctic climate during Eocene hyperthermals: wet summers on Ellesmere Island? *American Geophysical Union Fall Meeting, San Francisco, CA. Poster presentation.*

SERVICE

Reviewer for the following journals: *Palaeogeography, Palaeoclimatology, Palaeoecology; Palaios; Palaeobiology; Earth-Science Reviews; Canadian Journal of Earth Sciences; Cretaceous Research; Palaeontographica Canadiana.*

International Organisation of Palaeobotany, North America (Canada Section) social media manager, and graduate & student representative (2018–2020).

Review of the McAbee Management Protocols document for B.C Heritage Branch FLRNO (March 2017)

Organization committee - Recruitment and Advertisement, Western Inter-University Geoscience Conference 2016

Academic Councilor, Geological Sciences representative to University of Saskatchewan Graduate Student Association 2013–2018

Academic Councilor, University of Saskatchewan Biology Student Association 2012–2013

CONSULTING, PUBLIC EDUCATION, & OUTREACH

Invited Speaker, Kamloops Exploration Group (KEG) Speaker Series (March 2020):

Public lectures in Kamloops and Merritt (On the Road Scholar Talk), and elementary school talk to Logan Lake Elementary School.

Paleontological and Geological Consultant (2018–2020):

Heritage Branch FLRNO British Columbia: consulting on the development of the McAbee

Research and Interpretation Center, and the conservation and stewardship of the McAbee Fossil Beds (Current). Development of fossil displays and training of interpreter staff for the McAbee Fossil Beds.

Paleobotanical and Scientific Advisor (2019):

PBS Nova Documentary “Polar Extremes”, release date 2020-02-05.

Paleontological Consultant (2017):

Saskatoon Fossil Safari Program: assisted in the development of the program, additional materials, and volunteer training. Winner of the 2017 Lieutenant Governors Heritage Education Award

Elementary School Palaeontology School Educational Outreach (2016-2018):

Visited or skyped with elementary and high schools in Alberta and Manitoba, and gave presentations to various grades on geology, palaeontology, and palaeobotany.

Leaf Rapids Education Centre (K-12), 2016, Leaf Rapids, Manitoba

E.G Wahlstrom Elementary School (K-12), 2017, Slave Lake, Alberta

Carman Elementary (K-6), 2018, Carman, Manitoba

MEDIA INTERVIEWS

Media interviews (re: West et al. 2019) – CBC Nunavut, USask News, Science Daily, Atlas Obscura (Nov 2019 – Jan. 2020). PDFs and URLs available upon request.

Radio interview (re: West et al. 2019) – CBC Radio North (Dec. 2019)

Documentary interview (re: McAbee Fossil Beds) – Dino Trails (June 2019)

Radio interview (re: Reichgelt et al. 2018) – CBC Radio (Regina & Saskatoon 2018)

News media interview (re: Greenwood and West 2017) – CBC (2017)

News media interview (re: Gushulak et al. 2016) – Brandon Sun (2016)

TEACHING EXPERIENCE

University of Saskatchewan:

GEOL 121 Introductory Geology (2012–2016) teaching assistant and lab instructor;

GEOL 122 Historical Geology (2012–2016) teaching assistant and lab instructor;

GEOL 247 Paleontology (2013–2019) teaching assistant and lab instructor, guest lecturer for 2020 term;

GEOL 245 Sedimentology (2013–2016) teaching assistant and lab instructor;

GEOL 308 Field Mapping (2016–2019) teaching assistant field instructor.

Brandon University:

15:467 / 42:467 Fossil Plants & Palaeoenvironments (2014–2018) guest lecturer and guest teaching assistant;

15:180 / 42:180 The world of the dinosaurs (winter term 2018) guest lecturer.

MENTORING EXPERIENCE

J.M Vachon (2018–2019) mentoring during MSc thesis project, Brandon University

M. Nadeau (2017–2019) mentored during MSc thesis project, University of Saskatchewan

B.A. Laing (2015–2018) mentored during MSc thesis project, University of Saskatchewan

B.S. McDonald (2015–2019) mentored during MSc and PhD thesis project, University of Saskatchewan

A.J. Lowe (2016–2018) mentored during MSc thesis project, Brandon University
M. Tsui (2016) mentored during senior undergraduate thesis project, University of Saskatchewan
K. Ens (2016) mentored during senior undergraduate thesis project, University of Saskatchewan
M. Sudermann (2016, 2017–2019) mentored during undergraduate honours and MSc thesis project, Brandon University
C.A.C Gushulak (2015) mentored during honours thesis project, Brandon University

CERTIFICATIONS

Wilderness Safety – University of Saskatchewan – (2017)
Firearms Safety Course (Renewed 2017)
Wilderness & Remote First Aid (CPR/AED) Level C – (certified until 2020)
Canadian Red Cross First Aid – (certified until 2020)

PROFESSIONAL AFFILIATIONS

American Geophysical Union, Member
Geological Association of Canada, Member
Geological Society of America, Member
Canadian Botanical Association, Member
Botanical Society of America, Member (Paleobotanical section)
International Organisation of Palaeobotany, Member
The Paleontological Society, Member