CHRISTOPHER M. SCHILLER

CURRICULUM VITAE

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BURKE MUSEUM

Research Associate
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EDUCATION

Nov. 2020 **Ph.D. in Earth Sciences**
Montana State University – Bozeman, Montana, USA
Dissertation: "Hydrothermal influences on the Holocene environmental history of central Yellowstone National Park"

Committee: Cathy Whitlock (Chair), David B. McWethy, Lisa A. Morgan, Devon Orme

May 2015 **B.S. in Geology, *magna cum laude***
South Dakota School of Mines and Technology – Rapid City, South Dakota, USA

TEACHING & ADVISING

2025-present Part-time Instructor (University of Washington—Tacoma)
TCORE 102, Introduction to Science (Topic: Fossils, lecture)
TCORE 112, Introduction to Science (Topic: Quaternary Science, lecture)
TGEOS 117, Physical Geology (lecture, lab, field trips)

Part-time Professor (Tacoma Community College)
GEOL 101, Introduction to Physical Geology (lecture, lab)
BIOL 105/GEOL 108, Fossils and the History of Life (hybrid lecture, lab)

2024-2025 Visiting Assistant Professor (Pacific Lutheran University)
ESCI 104, Conservation of Natural Resources (lecture, lab)
BIOL 116, Introductory Ecology (lecture, lab)
BIOL 368, Ecology (lecture, lab, field trips)

2021-2024 Undergraduate Research Advisor, "Team Fire" (University of Washington)
BIOL 499, Undergraduate Research (advisor, A. DiCiro, H. Stephens, S. Lieberman, R. Nguyen, A. Reyna, A. Riley)

Fall 2020 Teaching Assistant (Montana State University)
ERTH 212, Yellowstone: Scientific Laboratory (online/in-person hybrid lecture, lab)

Fall 2019 Instructor (Montana State University)
ERTH 212, Yellowstone: Scientific Laboratory (lecture, lab, field trips)

2017-2018 Undergraduate Research Advisor (Montana State University)
Supervised undergraduate researchers (S. Blessing, J. Eggers, A. Mausshardt, D. Quick)

Spring 2016 Teaching Assistant, Earth System Sciences (Montana State University)
ERTH 101, Earth System Sciences (lab)

2014-2015 First-Year Peer Advisor, Teaching Assistant (South Dakota School of Mines and Technology)
IS 110/GEOL 110, Explorations (lab, grading, advising)

STUDENT RESEARCH

Busch K, McWethy DB, **Schiller CM,** Whitlock C. April 2024. A Holocene record of lodgepole pine forest fire and resilience in western Yellowstone: MSU Earth Sciences Student Colloquium, Bozeman, MT. (Poster)

Shelly J, **Schiller CM,** Whitlock C. April 2024. Vegetation and fire history of Rush Lake, Yellowstone National Park: MSU Earth Sciences Student Colloquium, Bozeman, MT. (Poster)

Lutes JLN, **Schiller CM,** Strömberg CAE. March 2024. Middle Miocene Climate and Landscape Stability in the Inland Pacific Northwest: UW Earth and Space Science Research Gala, Seattle, WA. (Poster)

Riley A, **Schiller CM,** Strömberg CAE. May 2023. Reconstructing plant communities from the Watersnake locality of the Sucker Creek Formation in southwestern Idaho using charcoal found in ash flow deposits: UW Undergraduate Research Symposium, Seattle, WA. (Poster)

Brooks HM, **Schiller CM,** Strömberg CAE. May 2023. Validating fossil charcoal morphometry as a tool for determining fuel types of ancient fires: UW Undergraduate Research Symposium, Seattle, WA. (Poster)

OUTREACH

Summer 2024 Yellowstone paleoecology field course (Yellowstone Forever/OLLI Montana State U.)
Paleoecology and geology field course (general public)

2021-present Public microscopy space (Burke Museum, U. of Washington)
Ongoing paleoecology research and developed video for public-facing lab (general public)

Fall 2019 Wonderlust field trip (Dept. of Earth Sciences, Montana State U.)
Glacial geology field trip to Yellowstone National Park (general public)

Fall 2018 Climate change lessons (Chief Joseph Middle School – Bozeman, MT)
Climate change/palynology outreach (K-12)

2017-2019 Lab tours (Dept. of Earth Sciences, Montana State U.)
Climate change/palynology outreach (undergraduate)

2017-2018 Science Action Club (Irving Elementary School – Bozeman, MT)
General science outreach (K-12)

Spring 2017 MSU Nano/Microdays (Dept. of Earth Sciences, Montana State U.)
Palynology outreach (general public)

2009-2013 Education volunteer/intern (Oregon Museum of Science and Industry – Portland, OR)
General science/paleontology outreach (general public)

RESEARCH INTERESTS

Paleobotany and paleoenvironments on Cenozoic to Quaternary timescales; Disturbance ecology of ancient ecosystems; Vegetation response to ancient climate change.

RESEARCH EMPLOYMENT

2023-2024	**Postdoctoral Researcher** (Dept. of Earth Sciences, Montana State U.) Geochemistry, limnogeology, paleovegetation of Yellowstone National Park's thermal basins (PI Cathy Whitlock).
2021-2023	**NSF-EAR Postdoctoral Fellow** (Dept. of Biology/Burke Museum, U. of Washington) Paleovegetation change during the Miocene Climatic Optimum in the Pacific Northwest (PI Caroline Strömberg).
Spring 2021	**Postdoctoral Researcher** (Dept. of Earth Sciences, Montana State U.) Pollen and limnogeology sample curation and data stewardship (PI Cathy Whitlock).
2016-2020	**Doctoral Researcher** (Dept. of Earth Sciences, Montana State U.) Hydrothermal and volcanic influences on Holocene vegetation of Yellowstone National Park and surrounding region (PI Cathy Whitlock).
July 2015	**Field Assistant** (Program of Atmospheric Science, South Dakota School of Mines and Technology) Distribution and history of nuisance algae in Grand Teton National Park (PI Lisa Kunza).
2014-2015	**Research Assistant** (Dept. of Geology and Geological Engineering, South Dakota School of Mines and Technology) Pleistocene foraminifera preparation (PI Christina Belanger).

PUBLICATIONS

2026

Polenz M, **Schiller CM,** Lowe AJ, Lambert CA, Pringle PT. *in prep*. Miocene-Pliocene persistence of Neogene relict taxa in the Pacific Northwest Mashel Formation. *PALAIOS*.

Lowe AJ, Strömberg CAE, Dillhoff R, Schmitz M, Dunn R, **Schiller CM,** Reichgelt T, Sato-Kreis H, Wilson-Deibel P. 2026. Vegetation, climate, and age of the mid-Miocene Mascall flora reinvestigated: Leeward environments of the Cascade Mountains. *Journal of Paleontology*. 1-27. doi:10.1017/jpa.202610267.

Whitlock C, **Schiller CM,** Hostetler SW, Hurwitz S, Alt M, Brown SR, Harrison LN, Alder JR, Shelly J, Busch K, McWethy DB. 2026. Postglacial ecological development of a hydrothermal landscape in Yellowstone National Park. *PNAS*. 123: 35: e22613422123. doi: 10.1073/pnas.2613422123.

2024

Schiller CM, Lowe AJ, Dillhoff TA, Fields PF, Taggart RE, Schmitz MD, Strömberg CAE. 2024. Mechanisms of short-term plant community change from the Miocene Succor Creek flora, Oregon and Idaho (USA). *PLOS One*. 19: 11: e0312104. doi: 10.137/journal.pone.0312104.

2023

Schiller CM, Alt M, Nanavati WP, Wendt JAF, Stahle LN. 2023. Getting Information from the Past: Palaeoecological Studies of Terrestrial Ecosystems, *in* Clifford N, Cope M, Gillespie T, eds. *Key Methods in Geography*: 4th ed. ISBN: 9781529772081.

2022

Morgan LA, Shanks WCP, Pierce KL, Iverson NA, **Schiller CM,** Brown SR, Zahajská P, Cartier R, Cash R, Whitlock C, Fritz SC, Best J, Lovalvo DA, Lowers H, Benzel W. 2022. The dynamic floor of Yellowstone Lake,

Wyoming, USA: The last 14 k.y. of hydrothermal explosions, venting, doming, and faulting. *GSA Bulletin*. 135: 547-574. doi: 10.1130/B36190.1.

Schiller CM, Whitlock C, Brown SR. 2022. Holocene geo-ecological evolution of Lower Geyser Basin, Yellowstone National Park (USA). *Quaternary Research*. 105: 201-217. doi:10.1017/qua.2021.42.

2021

Brown SR, Cartier R, **Schiller CM,** Zahajská P, Fritz SC, Morgan LA, Whitlock C, Conley DJ, Lacey JH, Leng MJ, Shanks WCP. 2021.0 Multi-proxy record of Holocene paleoenvironmental conditions from Yellowstone Lake, Wyoming, USA. *Quaternary Science Reviews*. 274: 107275. doi:10.1016/j.quascirev.2021.107275.

Schiller CM, Whitlock C, Elder KL, Iverson NA, Abbott MB. 2021. Erroneously old radiocarbon ages from terrestrial pollen concentrates in Yellowstone Lake, Wyoming, USA. *Radiocarbon*. 63: 1: 321-342. doi:10.1017/RDC.2020.118.

2020

Schiller CM, Whitlock C, Alt M, Morgan LA. 2020. Vegetation responses to Quaternary volcanic and hydrothermal disturbances in the Northern Rocky Mountains and Greater Yellowstone Ecosystem (USA). *Palaeogeography, Palaeoclimatology, Palaeoecology*. 559: 109859. doi:10.1016/j.palaeo.2020.109859.

pre-2020

Spanbauer T, Brown SR, Cartier R, **Schiller CM,** Zahajská P, Conley DJ, Fritz SC, Theriot EC, Whitlock C. 2018. Yellowstone Lake Coring Projects: Research with a History. *Limnology and Oceanography Bulletin*. 27: 1: 6–10. doi:10.1002/lob.10229.

Belanger CL, Orhun OG, **Schiller CM.** 2016. Benthic foraminferal faunas reveal transport dynamics and no-analog environments on a glaciated margin (Gulf of Alaska). *Palaeogeography, Palaeoclimatology, Palaeoecology*. 454: 54-64. doi:10.1016/j.palaeo.2016.04.032.

CONFERENCE PRESENTATIONS

2026

Schiller CM. April 2026. Get ‘em in groups: Fostering student belonging and self-efficacy with classroom learning communities in a Core course: ELEVATE Teaching Development Showcase, Tacoma, WA. (Poster)

2024

Schiller CM, Whitlock C, Hurwitz H, Iverson NA. September 2024. Lacustrine records of postglacial climate-hydrothermal-ecosystem change in Lower Geyser Basin, Yellowstone National Park: GSA (Geologic Society of America) Connects, Anaheim, CA. (Talk)

Schiller CM, Kester PR, Lowe AJ, Polenz M. September 2024. The Mio-Pliocene Mashel flora (Pierce Co., WA) and the late persistence of “Tertiary relict” taxa: GSA Connects, Anaheim, CA. (Poster)

Zahajská P, Stamm FM, Baldermann A, **Schiller CM,** Conley D. May 2024. The stubborn silica: Undissolved diatom frustules during sequential leaching: Isotopes in Biogenic Silica, Louvain-La-Neuve, BELGIUM. (Talk)

2023

Lowe AJ, Schmitz MD, Dillhoff R, Dillhoff TA, Nares F, **Schiller CM,** Rember WC, Strömberg CAE. December 2023. The terrestrial manifestation of Miocene climatic change in the Pacific Northwest (USA): Insights from the paleobotanical record: AGU (American Geophysical Union), San Francisco, CA. (Talk)

Schiller CM, Lowe AJ, Strömberg CAE, Schmitz MD, Dillhoff TA. October 2023. Significance of short-term variability in Middle Miocene palynofloras of Oregon and Idaho: GSA Connects, Pittsburgh, PA. (Talk)

2022

Schiller CM, Lowe AJ, Strömberg CAE, Schmitz MD, Dillhoff TA, Fields PF, Taggart RE. October 2022. Evidence for volcanic disturbance in the Middle Miocene Succor Creek flora (Oregon and Idaho): GSA Connects, Denver, CO. (Talk)

Schiller CM, Whitlock C, Brown SR, Zahajská P. May 2022. Holocene history of Lower Geyser Basin told through lake sediments: Biennial Scientific Conference on the Greater Yellowstone Ecosystem. (Talk)

2020

Schiller CM, Whitlock C, Brown SR, Zahajská P. October 2020. Lake sediment record of hydrothermal and ecological change in Lower Geyser Basin, Yellowstone National Park: GSA (Geological Society of America) Connects Online. (Talk)

Schiller CM, Whitlock C. June 2020. A Holocene geo-ecological history of Yellowstone's Lower Geyser Basin: AMQUA (American Quaternary Association) Virtual Biennial Meeting. (Poster)

pre-2020

Schiller CM, Whitlock C. September 2019. Decoupling the ecological response to changes in climate and hydrothermal activity in Lower Geyser Basin of Yellowstone National Park: GSA Annual Meeting, Phoenix, AZ. (Talk)

Schiller CM, Whitlock C, Hurwitz S, Peek S. September 2019. Palynostratigraphic control on sinter deposition in Upper Geyser Basin, Yellowstone National Park: GSA Annual Meeting, Phoenix, AZ. (Poster)

Schiller CM, Alt M, Whitlock C. July 2019. Quaternary vegetation responses to a range of volcanic disturbances in the Northern Rocky Mountains (USA): 20th International Quaternary Association (INQUA) Congress, Dublin, Ireland. (Talk)

Schiller CM, Alt M, Whitlock C. April 2019. Vegetation responses to Quaternary volcanic disturbances in the Northern Rocky Mountains and Yellowstone National Park: Earth Sciences Student Colloquium, Bozeman, MT. (Talk)

Schiller CM, Whitlock C. October 2018. Radiocarbon dating pollen residues in a volcanic setting: GSA Annual Meeting, Indianapolis, IN. (Poster)

Brown SR, **Schiller CM,** Fritz SC, Whitlock C, Morgan LA. October 2018. Ecological impact of postglacial hydrothermal explosion events in Yellowstone National Park inferred from Yellowstone Lake sediments: GSA Annual Meeting, Indianapolis, IN. (Talk)

Schiller CM, Whitlock C. April 2018. Dynamics of vegetation and hydrothermal explosions from Yellowstone lake, Wyoming: Earth Sciences Student Colloquium, Bozeman, MT. (Talk)

Schiller CM, Haueter JZ, Kunza LA, Spaulding SA. May 2015. Historical abundance of *Didymosphenia geminata* in Grand Teton National Park, Wyoming: SFS (Society of Freshwater Science) Annual Meeting, Milwaukee, WI. (Poster)

Schiller CM, Haueter JZ, Kunza LA. March 2015. Recent paleontological record of *Didymosphenia geminata* in Grand Teton National Park: Western South Dakota Hydrology Conference, Rapid City, SD. (Poster)

FUNDING

2023	U. of Washington Dept. of Biology Mary Race Bevis Postdoctoral Research Award ($1500) "Cenozoic Paleofire of the Pacific Northwest"
2022-2026	NSF EAR – Sedimentary Geology & Paleobiology ($559,325) "Postglacial history of a Yellowstone geyser basin: understanding hydrothermal geo-ecosystem dynamics over millennia" (co-written with PIs C. Whitlock, D.B. McWethy, Montana State U.)
2021-2023	NSF EAR – Postdoctoral Fellowship ($174,000) "Mid-Miocene climate, vegetation, and disturbance dynamics of the Pacific Northwest"
2020	Montana Institute on Ecosystems Yellowstone Graduate Fellowship ($10,000)
2019	GSA Student Travel Grant ($100)
	USNC/AMQUA INQUA Congress Fellowship Program ($600)
	Montana State U. Dept. of Earth Sciences Ph.D. Enhancement Award
2018	GSA Student Travel Grant ($125)
2014-2015	South Dakota School of Mines and Technology Dept. of Geology and Geological Engineering Seth Schaefer Geology Scholarship
2013-2014	South Dakota School of Mines and Technology Dept. of Geology and Geological Engineering Jane Spiece Memorial Scholarship

PROFESSIONAL MEMBERSHIPS

2022-Present	The Palynological Society (AASP)
2016-Present	American Quaternary Association
2012-Present	Geological Society of America (Cordilleran Section)
2014-Present	Alpha Chi Sigma Fraternity

SERVICE

2019-2020	Montana State University Earth Sciences Student Colloquium Chair
2018-2019	Montana State University Earth Sciences Student Colloquium Co-Chair
2014-2015	BΦ Chapter of Alpha Chi Sigma Alumni Secretary

Peer reviewer for Ecology and Evolution, Geology, Geophysical Research Letters, Journal of Quaternary Science, PALAIOS, Palynology, and Radiocarbon

Data steward for Neotoma Paleoecology Database