

Maya LaGrange Rao

✉ maya.lagrange@yale.edu 🌐 Canadian Citizenship [📄 Google Scholar](#)

📍 Department of Earth and Planetary Sciences, Yale University, 210 Whitney Ave, New Haven, Connecticut, 06511, USA

EDUCATION

- 2016–2022 **Ph.D.** in Earth and Atmospheric Sciences, **University of Alberta**
Edmonton, Canada
Advisors: Professor Murray Gingras and Professor Kurt Konhauser
Thesis topic: Geochemistry and sequence stratigraphy of a Devonian marine mudstone in Northwest Territories, Canada.
- 2012–2016 **BSc.** with Specialization in Geology, **University of Alberta**
Edmonton, Canada
Undergraduate thesis topic: Facies-analysis and depositional environments of a Cambrian mixed carbonate-clastic succession in Northwest Territories, Canada.

PROFESSIONAL APPOINTMENTS

- 2024– **Scientist, [RUBBLE Marine Expedition](#)**
Cruise led by the Senckenberg Research Institute (Frankfurt, Germany)
 - Collaborator and onboard scientist focusing on deep sea bioturbation (styles, intensities, and controls).
 - Expedition in the tropical Atlantic. Departing from Las Palmas, Canary Islands on October 22, 2024, and disembarking in Fortaleza, Brazil on November 28, 2024.
- 2023– **Donnelley Postdoctoral Fellow**, Yale Institute for Biospheric Studies
Earth and Planetary Sciences Department, **Yale University**
New Haven, United States
 - Conservation paleobiology research investigating climate-driven changes in bioturbation along the U.S. West Coast from the Pleistocene to the Holocene.

- 2022–2023 **Instructor in Earth and Environmental Sciences**
Physical Sciences Department, **MacEwan University**
Edmonton, Canada
- 2016 **Summer Research Intern and Field Assistant**
Ichnology Research Group, **University of Alberta**
Edmonton, Canada
- 2015 **Summer Research Intern and Field Assistant**
Ichnology Research Group, **University of Alberta**
Edmonton, Canada

TEACHING & MENTORSHIP

Teaching

- 2022–2023 **Instructor**, MacEwan University
- Taught lectures for EASC 271 The Oceans.
 - Taught labs for EASC 271 The Oceans, EASC 101 Introduction to Physical Science, and EASC 102 Introduction to Environmental Earth Science.
 - Gave two guest lectures in EASC 240 Sedimentology and Stratigraphy: (1) Marine Sediments, and (2) Stratigraphy.
- 2016–2022 **Teaching Assistant**, University of Alberta
- Twelve teaching assistant positions in five different courses: EAS 222 Stratigraphy and Sedimentation, EAS 210 Engineering Earth Science, EAS 462/562 Sequence Stratigraphy and Basin Analysis, EAS 364 Petroleum Geology, and EAS 234 Geology Field School.
- June 2020 Guest Lecturer, University of Alberta
- EAS 209 Geology of Western Canada National Parks.
- June 2019 Field Trip Leader, Geobiology Society Conference
Banff, Canada
- Co-leader for the *Lower Cambrian Bioturbated Beds* field trip, which focused on the ichnology and sedimentology of the Gog Group and Mount Whyte Formations in the Nordegg area of Alberta, Canada.

Mentorship

- 2021–2022 Founder of the [Mentorship Program](#) for the Earth & Atmospheric Sciences Department, University of Alberta
- Collaborated with three other students to develop a mentorship program for our department.

- 2021–2022 [Graduate Student Mentor](#), University of Alberta
- Regularly met with undergraduate mentee to check in and answer questions.
 - Met with mentorship family (comprised of three undergraduate students, three graduate students, and one faculty member) to build peer connections.
- 2018–2022 **Mentor of Undergraduate Thesis Students**, University of Alberta
- Graduate student mentor of two undergraduate thesis students and one summer student holding a Natural Sciences and Engineering Research Council of Canada (NSERC) Undergraduate Student Research Award (USRA).
 - Assisted with project planning, logistics, editing of written work, and presentations.
 - Topics mentored:
 - o 2021/22 Undergraduate Thesis: Changes in clay mineral chemistry and morphology through interaction with degrading organic matter. Student: Ryusuke Kimitsuki.
 - o 2021 Summer NSERC USRA: Multivariate statistical analysis of XRF and XRD geochemical datasets using R. Student: Smriti Dhiman.
 - o 2017/18 Undergraduate Thesis: Pore types, pore volume, and pore size distribution in four samples from the Horn River Group of the Northwest Territories. Published. Student: Nicole Atienza.

GRANTS

- Yale Institute for Biospheric Studies Gaylord Donnelley Postdoctoral Environmental Fellowship (Sept 2023–Aug 2025)
- Geological Society of America (GSA) Graduate Student Research Grant (2021)
- Shell Enhanced Learning Fund (2021)
- Society for Sedimentary Geology (SEPM) Student Research Grant (2021)
- Northern Scientific Training Program Government of Canada Grant (2018/19)
- Shell Enhanced Learning Fund (2017)
- Natural Sciences and Engineering Research Council of Canada (NSERC) Undergraduate Student Research Award (Summer 2016)

ACADEMIC SERVICE & OUTREACH

Reviews

Sedimentology (2024)
 Canadian Journal of Earth Sciences (2024)
 Yale Institute for Biospheric Studies Small Grant Proposals (2024)
 Bulletin of Canadian Energy Geoscience (2020)

Outreach

- July 2024 **Enrichment Session Instructor**, [Yale Pathways to Science](#)
- Planned, prepared, and taught a hands-on outreach session for high school students entitled “Behaviors of Seafloor Animals — Past, Present, and Future!”
 - Led the session four times with groups of 10–22 high school students.
- Spring 2021 **3-Minute Thesis (3MT) Finalist**, University of Alberta
- Explained my research topic and its importance in three minutes for a non-specialized audience.
- 2015–2019 **Earth Science Outreach Volunteer**, Yellowknife Geoscience Forum
- Delivered fun, hands-on Earth science outreach activities in a one-day event for grade five students.
 - Volunteered for the event annually from 2015 – 2019.
- Feb 2017 **Conference Volunteer**, Women in Scholarship, Engineering, Science, and Technology (WISEST) Choices Conference, University of Alberta
- Campus ambassador for a week-long conference allowing grade six girls and gender-diverse students to participate in science, engineering, and technology activities.

Leadership

- April 2024 **Conference Lead Organizer**, [Northeast Geobiology Symposium](#), Yale University
- 2017–2022 **Treasurer**, American Association of Petroleum Geologists Student Chapter, University of Alberta
- 2018–2019 **President**, ATLAS Earth and Atmospheric Sciences Graduate Students’ Association, University of Alberta
- 2017–2018 **Weekly Speaker Series Coordinator**, ATLAS Earth and Atmospheric Sciences Graduate Students’ Association, University of Alberta
- 2016–2017 **Social Convenor**, ATLAS Earth and Atmospheric Sciences Graduate Students’ Association, University of Alberta
- 2015–2016 **Vice President**, PS Warren Geological Society (Undergraduate Group), University of Alberta
- 2014–2015 **Social Convenor**, PS Warren Geological Society (Undergraduate Group), University of Alberta

PUBLICATIONS

Refereed Publications (*denotes student mentored)

Harris, B. S., Olariu, C., Melnyk, S., **LaGrange, M. T.**, Konhauser, K. O., & Gingras, M. K. (2024). [Aratichnus igen. nov. from the Eocene-aged Baronía Formation, Àger Basin, Lleida, Spain](#). *Ichnos*, 1-14.

LaGrange, M.T., Li, K., Li, L., Kabanov, P., Konhauser, K. O., Harris, B. S., ... & Gingras, M. K. (2023). [An example of the Middle to Late Devonian marine nitrogen cycle from mudstones of the Horn River Group, Northwest Territories, Canada](#). *Palaeogeography, Palaeoclimatology, Palaeoecology*, 618, 111512.

LaGrange, M.T., Atienza, N.M.M.*, Biddle, S.K., Harris, B.S., Fiess, K.M., Terlaky, V., Konhauser, K., and Gingras, M.K. (2022). [The nature, origin, and predictors of porosity in the middle to Late Devonian Horn River Group of the Central Mackenzie Valley, Northwest Territories, Canada](#). *Marine and Petroleum Geology*, 142, 105738.

Harris, B.S., **LaGrange, M.T.**, Biddle, S.K., Playter, T.L., Fiess, K.M., and Gingras, M.K. (2021). [Chemostratigraphy as a tool for sequence stratigraphy in the Devonian Hare Indian Formation in the Mackenzie Mountains and Central Mackenzie Valley, Northwest Territories, Canada](#). *Canadian Journal of Earth Sciences*, 59(1), 29–45.

Biddle, S., **LaGrange, M.T.**, Harris, B., Fiess, K., Terlaky, and Gingras, M.K. (2021). [A fine detail physiochemical depositional model for Devonian organic-rich mudstones: a petrographic study of the Hare Indian and Canol formations, Central Mackenzie Valley, Northwest Territories](#). *Sedimentary Geology*, 414, 105838.

LaGrange, M.T., Konhauser, K.O., Catuneanu, O., Harris, B.S., Playter, T.L., and Gingras, M.K. (2020). [Sequence stratigraphy in organic-rich marine mudstone successions using chemostratigraphic datasets](#). *Earth-Science Reviews*, 203, 103137.

SCIENTIFIC COMMUNICATIONS

First-Author Presentations

LaGrange, M.T., (2023). Assessing temperature-driven changes in coastal bioturbation at Willapa Bay, Washington. **Yale Institute for Biospheric Studies (YIBS) Seminar Series**.

LaGrange, M.T., Li, K., Li, L., Konhauser, K.O., Harris, B.S., Biddle, S.K., Terlaky, V., and Gingras, M.K. (2022). Biological productivity and primary producers recorded in the depositional record of Middle to Late Devonian mudstones from the Horn River Group, Northwest Territories, Canada. **Goldschmidt Hawai'i 2022**.

LaGrange, M.T., Atienza, N.M.M., Harris, B., Biddle, S., Fiess, K.M., and Gingras, M.K., (2020). Porosity characterization, evolution, and controls in the Devonian Horn River Group, Central Mackenzie Valley, Northwest Territories. **Yellowknife Geoscience Forum**.

LaGrange, M., Atienza, N., Harris, B., Biddle, S., and Gingras, M., (2020). Porosity characterization and prediction in the Middle to Late Devonian Horn River Group, Central

Mackenzie Valley, Northwest Territories, Canada. **Geological Society of America Connects Online.**

LaGrange, M.T., Li, L., Konhauser, K.O., Harris, B., Biddle, S., Fiess, K., Terlaky, V., and Gingras, M.K. (2019). Carbon and nitrogen isotopic signatures in the Devonian Canol Formation: implications for paleodepositional conditions. **Yellowknife Geoscience Forum.**

LaGrange, M., Harris, B., Fiess, K., Terlaky, V., and Gingras, M. (2018). Applying chemostratigraphic data to establish a sequence stratigraphic framework: an example from the Devonian Canol Formation. **Yellowknife Geoscience Forum.**

LaGrange M., Harris, B., Fiess, K., Terlaky, V., and Gingras, M. (2017). Integrating chemostratigraphic and sedimentological datasets to establish a sequence stratigraphic framework for the Devonian Canol Formation, Central Mackenzie Valley and Mackenzie Mountains, Northwest Territories. **Yellowknife Geoscience Forum.**

LaGrange, M.T., Harris, B.S., Ansell, M.J., Herbers, D.S., Fiess, K.M., Terlaky, V., and Gingras, M.K. (2017). Framing mudrocks of the Hare Indian and Canol formations (Horn River Group, Central Mackenzie Valley) in a sequence stratigraphic context using high-resolution chemostratigraphy. **Canadian Energy Geoscience Association Core Conference.**

First-Author Posters

LaGrange, M.T., Li, L., Konhauser, K.O., and Gingras, M.K. (2019). Carbon and nitrogen stable isotope signatures in the Devonian Canol Formation, Central Mackenzie Valley, Northwest Territories, Canada. **Geobiology 2019 – 2nd Geobiology Society Conference.**

LaGrange, M., Harris, B., Fiess, K., Terlaky, V., and Gingras, M. (2019). Sequence stratigraphy in mudstone intervals using chemostratigraphic datasets: an example from the Devonian Canol Formation. **American Association of Petroleum Geologists – ACE.**

LaGrange, M., Herbers, D., and Gingras, M. (2016). Geochemistry, Sedimentology, and Ichnology of the Hare Indian Formation at Mountain River Tributary, Mackenzie Mountains, N.T. **Yellowknife Geoscience Forum.**

LaGrange Rao, M., Herbers, D., and Gingras, M. (2015). Sedimentology and Ichnology of the Mixed Carbonate and Siliciclastic Beds of the Mount Clark Formation at Dodo Canyon, Mackenzie Mountains, NT. **Yellowknife Geoscience Forum. Winner of best student poster award.**

Selected Co-Author Presentations & Posters (*denotes student mentored)

Harris, B.S., Biddle, S.K., **LaGrange, M.T.**, Melnyk, S., Lazowski, C., Alessi, D., and Gingras, M.K (2024). Spatial interactions between microbial mats and intertidal organisms, Willapa Bay, Washington, USA. **ICHNIA Conference**. Oral presentation.

Kimitsuki, R.* , **LaGrange Rao, M.**, Li, Y., Lazowski, C., Harris, B., Konhauser, K., and Gingras, M. (2022). The early diagenesis of clay minerals in the presence of organic matter. **ATLAS Student Research Symposium, University of Alberta**. Poster presentation (mentorship of undergraduate student).

Biddle, S., Harris, B., **LaGrange Rao, M.**, Gingras, M.K. (2021). Lithofacies, microfacies, and chemofacies comparison in a Devonian organic-rich mudstone. **Canadian Energy Geoscience Association – Core Conference**. Oral presentation.

Biddle, S., **LaGrange Rao, M.**, Harris, B., Fiess, K.M., Gingras, M.K. (2020). Recognizing the influence of burrowing meiofauna in marine mudrocks and what it means for paleoredox: a case study of microscopic trace fossils in the organic rich Horn River Group Devonian Mudrocks, Northwest Territories. **Geological Society of America Connects Online**. Poster presentation.

Atienza, N.* , **LaGrange Rao, M.**, Harris, B., and Gingras, M. (2018). Characterization of porosity in black shales using nitrogen adsorption experiments and scanning electron microscopy. An example from the Middle to Late Devonian Horn River Group, Central Mackenzie Valley, Northwest Territories. **ATLAS Student Research Symposium, University of Alberta**. Poster presentation (mentorship of undergraduate student).

Harris, B.S., **LaGrange, M.**, Ansell, M., and Gingras, M.K., (2017). Depositional paleoredox conditions of the organic rich mudstone internals in the Horn River Group, Mackenzie Mountains and Central Mackenzie Valley, NWT, Canada. **Geobiology 2017 – 1st Geobiology Society Conference**.

AWARDS

- University of Alberta Graduate Students' Association Recognition Awards: Spirit Award (2022)
- Canadian Association of Petroleum Producers Graduate Scholarship Geology (2021/22)
- Alberta Leaders in Equity Award of Distinction Program: Women in STEM (2020/21)
- Sproule Graduate Scholarship in Earth and Atmospheric Sciences (2020/21)
- Robert Cuthbertson Award in Geology (2019/20)
- Queen Elizabeth II Graduate Scholarship (2017/18)
- Finnigan Northern Award for Student Research Presentations (2017)
- Wigham Family Graduate Scholarship in Geology (2016/17)
- University of Alberta Graduate Recruitment Scholarship (2016/17)
- Encana Geology and Geophysics Scholarship (2015/16)

- Student Poster Winner: Northwest Territories and Nunavut Association of Professional Engineers and Geosciences Student Award (Yellowknife Geoscience Forum 2015)
- Bill Elder Scholarship in Geology (2015/16)
- Michael Woollett Memorial Scholarship (2015/16)
- Calgary Mineral Exploration Group Economic Geology Scholarship (2014/15)
- University of Alberta Faculty of Science Academic Excellence Scholarship (2012/13)
- University of Alberta Academic Excellence Scholarship (2012/13)

LANGUAGES

- English (native speaker), French (advanced)