

Dr. Marc Fassbender

Consulting Geoscientist
<https://marcfassbender.com>

Qualifications summary

- Strong expertise in economic geology, geochemistry, geostatistics and machine learning
- Diverse knowledge in software and visualization techniques
- Strong and structured team oriented work ethic

Education

Sep. '18 – Jun. '23	University of Ottawa, Canada Department of Earth Sciences Doctorate in Philosophy Earth Sciences
Oct. '15 – Nov. '17	University of Erlangen-Nuremberg, Germany “Petrology/Georesources & Applied Sedimentology” Degree: Master of Science, grade 1.7 (<i>scale: 1.0 very good – 4.0 sufficient</i>)
Oct.'12 – Sep. '15	University of Erlangen-Nuremberg, Germany “Geoscience” – focus on Petrology, Sedimentology and Paleontology Degree: Bachelor of Science, grade 2.5 (<i>scale: 1.0 very good – 4.0 sufficient</i>)
Oct.'09 – Jun. '12	Nicolaus-August-Otto-Schule, Rhinelande-Palatinate, Germany Abitur (High school diploma)

Practical experience

Jan. '23 – Present	Consulting Geoscientist at RSC Mining and Mineral Exploration <ul style="list-style-type: none">• Prospectivity analysis and drilling advice (Cu, Pb, Zn, Mn, Au)• Lithodomaining and modelling• Machine Learning: Prediction, clustering, regression, data imputation
Sep. '18 – May. '21	Teaching Assistant at University of Ottawa, Canada <ul style="list-style-type: none">• Introduction to mineralogy• Geochemistry• Field studies• Course Coordinator: Introduction to earth systems
Aug. '18 – Sep. '18	Geologist at GEOMAR – Helmholtz Centre for Ocean Research Kiel <ul style="list-style-type: none">• Data management and literature research
Jan. '18 – Jun. '18	Geologist at Hensel Ingenieur GmbH <ul style="list-style-type: none">• Data management and geoengineering
Jan. '18	Mineral & Exploration Dr. Krassmann <ul style="list-style-type: none">• Desktop study for gold exploration (Geology / Topography)

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Feb. '13 – Sep. '17	Student Research Assistant at the Chair of Petrology for sample preparation <ul style="list-style-type: none">• QA/QC of rock specimens and drill cores• Sawing, crushing, milling & polishing rock samples• Producing glass for XRF/LA-ICP-MS analysis
Sep. '16 – Oct. '16	Internship at the consulting firm “Dorfner ANZAPLAN”/Hirschau, Germany <ul style="list-style-type: none">• Feasibility studies of Co, Li and HPQ deposits• Mining market research and writing of geological reports• Laboratory work and mineral processing

Extracurricular activities

2019 –2020	President of the Ottawa-Carleton Universities Society of Economic Geologists
2018 – 2019	Vice-president of the Ottawa-Carleton Universities Society of Economic Geologists
2018 – present	Prospectors and Developers Association Canada
2017 – present	German Mineralogical Society (DMG) member
2017 – present	The German Geological Society (DGGV) member
2016 – present	Society of Economic Geologists, Inc. (SEG) member

Language skills

German	Native
English	Full professional proficiency

Additional skills

EDP	QGIS, CorelDRAW, Adobe Photoshop, Adobe Lightroom, MS Office, Theriak-Domino, Petrel, ioGas, R, Python, Leapfrog, Geoscience Analyst
Analytics	LA-ICP-MS, EMPA, XRF, SEM, ore/petrographic microscopy, geostatistical analytics, Machine Learning
Field experience	Germany, Austria, Scotland, India, Greece, Czech Republic, Italy, Canada, Research Cruise M168 – Origin and Geodynamic Evolution of Kings Trough

Honors & Awards

2022	Best PhD Poster Award at Students Mineral Colloquium (PDAC)
2022	Next Generation Explorer Award – Data Integration
2021	Teaching Assistant of the Year – Department of Earth Sciences (uOttawa)
2019	SEG Student Research Grant

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Selected projects

- Prospectivity analysis: stratiform, hypogene, supergene Mn-mineralisation (Australia)
- Data review and drilling advice: VMS (Yilgarn Craton)
- Greenstone belt wide prospectivity analysis and stream sediment sampling layout (Gabon)
- Stream sediment sample analysis/ lithodomaining: VMS, Chromite (Oman)
- Several machine learning projects: Lithodomaining, clustering, prediction, data imputation

Selected workshops

10 – 18. Dez. '20	Geodata Analytics – University of Tasmania
12 – 19. Oct. '19	Hydrothermal Ore Deposits – University of Ottawa
05 – 15. Dec. '18	Exploration Geochemistry – Laurentian University
12 – 14. Jan. '17	Drilling Methods in Mineral Exploration – TU Bergakademie Freiberg

Research work

Accepted Manuscript	M. L. Fassbender ; M. Hannington; M. Stewart; P. Brandl; A. Baxter; D. Diekrup (2023). Geochemical Signatures of Mafic Volcanic Rocks in Modern Oceanic Settings and Implications for Archean Mafic Magmatism. <i>Economic Geology</i> .
Published Manuscript	M. L. Fassbender ; M. Hannington; M. Stewart; P. Brandl; A. Baxter; D. Diekrup (2023). Geochemical Signatures of Felsic Volcanic Rocks in Modern Oceanic Settings and Implications for Archean Greenstone Belts. <i>Economic Geology, Volume 188, Issue 2, p. 319-345</i> .
Published Manuscript	M. Stewart; M. Hannington; A. Baxter; A. Krätschel; S. Petersen; P. Brandl; M. Anderson; P. Mercier-Langevin; R. Mensing; K. Breker; M. L. Fassbender (2021). A new geological map of the Lau Basin reveals crustal growth processes in arc-backarc systems. <i>Geosphere</i> .
Published Manuscript	S. Brandt; M. L. Fassbender ; R. Klemd; C. Macauley; P. Felfer; K. Haase (2021). Cumulate olivine: A novel host for HREE mineralization. <i>Geology, Volume 49, Issue 4, p. 457-462</i> .
Published Manuscript	S. Brandt; R. Klemd; K. Haase; M. L. Fassbender ; T. Vennemann (2020) Formation of the Vergenoeg F-Fe-REE Deposit (South Africa) by Accumulation from a Ferroan Silicic Magma. <i>Journal of Petrology, Volume 60, Issue 12, p. 2339-2368</i> .
Conference Talk	M. L. Fassbender ; M. Hannington; M. Stewart; P. Brandl; A. Baxter; D. Diekrup (2021). Geochemical Signatures of Felsic Volcanic Rocks in Modern Oceanic Settings and Implications for Archean Greenstone Belts. 100 th Anniversary Society of Economic Geology Conference, Canada 2021.
Conference Poster	M. Ryan; M. Hannington; A. Baxter; M. Stewart; K. Breker; M. L. Fassbender (2022). Analysis of magmatic productivity at the Rouchambeau Rifts, northern Lau back-arc Basin. Prospectors and Developers Association Canada Conference, Canada 2022.

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- Conference Poster **M. L. Fassbender**; M. Hannington; A. Baxter; D. Diekrup; M. Stewart; P. Brandl (2022). Archean mafic magmatism: Insights from modern intraoceanic back-arc basins and mid-ocean ridge. Prospectors and Developers Association Canada Conference, Canada 2022.
- Conference Poster **M. L. Fassbender**; M. Hannington; P. Brandl; M. Stewart; A. Baxter; D. Diekrup (2020). Geochemical evolution of back-arc spreading regimes – a multivariate analysis of Lau Basin volcanic rocks. Prospectors and Developers Association of Canada, Conference 2020.
- Conference Poster **M. L. Fassbender**; M. Stewart; M. Hannington (2019). Volcanic Rock Geochemistry of the Lau Basin and its Implication for Seafloor Mapping. GAC-MAC-IAH Conference 2019.
- Conference Poster **M. L. Fassbender**; M. Hannington; M. Stewart (2019). Volcanic Rock Geochemistry of the Lau Basin: Unexpected Complexity of Active Back-arc Spreading Centers. Prospectors and Developers Association of Canada, Conference 2019.
- Conference Poster **M. L. Fassbender**; S. Brandt; R. Klemd; K. Haase (2017). Magmatic origin of the Vergenoeg F-Fe-REE deposit, South Africa. GeoBremen 2017. Joint Meeting of The German Geological Society (DGGV) and The German Mineralogical Society (DMG).
- Conference Poster **M. L. Fassbender**; S. Brandt; R. Klemd; K. Haase (2017). The petrogenetic evolution of the Vergenoeg F-Fe-REE deposit, South Africa: Insights from primary Fayalite rocks. 2nd Postgraduate Conference on the Geology of Ore Deposits.
- MSc Thesis *“The petrogenetic evolution of the Vergenoeg F-Fe-REE deposit, South Africa”*, supervisor: Prof. Dr. Reiner Klemd, Dr. Sönke Brand, grade 1.2
- BSc Thesis *“Element mobility during Paleoproterozoic soil formation, examples from the Udaipur paleosol, NW-India”*, supervisor: Prof. Dr. Helga de Wall, grade 2.1