

Mingxi Hu

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EDUCATION

Washington University in St. Louis, St. Louis, MO **May 2023**
Master of Science: Earth and Planetary Science

Advisor: **Dr. David A. Fike**

Relevant Coursework: Stable Isotope Geochemistry, Computational Modelling in Energy, Environmental and Chemical Engineering, Advanced Earth History, Soil Science, Aqueous Geochemistry.

Research Direction: Temporospatial heterogeneities of stable isotope proxies in carbonates; Effects of local sedimentation on $\delta^{13}\text{C}$ and $\delta^{34}\text{S}$ isotopic signatures

Thesis: [Lateral and Secular Variability in \$\delta^{13}\text{C}\$ and \$\delta^{34}\text{S}\$ from the Upper Ordovician GICE interval](#)

Colorado College, Colorado Springs, CO **May 2021**

Bachelor of Arts: Geology, *Cum Laude* with distinction in Geology

Advisor: **Dr. Paul M. Myrow**

GPA: 3.90/4.00

Relevant Coursework: Sedimentology and Stratigraphy, Geomorphology, Historical Geology, Geo-fluids and thermodynamics, Igneous and Metamorphic petrology, Geochemistry, Volcanology, Structural Geology, ArcGIS, Python.

Thesis: [Sedimentology, Paleoenvironment Analysis, and Chemostratigraphy of Lower Devonian to Lower Mississippian Strata in Northern Wyoming, United States](#)

University of Canterbury, Christchurch, New Zealand **Spring 2020**

Frontiers Abroad Geology (Exchange)

Advisor: **Dr. Darren Gravley & Dr. Alan Bischoff**

GPA: 3.9/4.0

Relevant Coursework: Applied Statistics, Geodynamics and Geohazards, Research Methods in Earth Science, Geothermal and Ore Exploration

Research: Lithofacies, Petrophysical Properties, and Reservoir Potentials for Proximal Scoria Deposits

HONORS

Neal J. Harr Award, The Rocky Mountain Association of Geologists Foundation

2021

Patricia J. Buster Research Scholarship

2019, 2020

Dean's List

2017–2021

PUBLICATIONS & CONFERENCE ABSTRACTS

[Hu, M., Myrow, P.M., Fike, D.A., Di Pasquo, M., Zatoń, M., Fischer, W.W., Coates, M., 2023, Depositional History of Devonian to Lower Carboniferous \(Tournaisian\) Strata, Northern Wyoming and Southern Montana: GSA Bulletin, *accepted*.](#)

[Di Pasquo, M., Hu, M., Zatoń, M., and Myrow, P.M., 2022, Microspores, megaspores, palynofacies, and depositional history of the upper Givetian Maywood Formation, Northern Wyoming, USA: Review of Palaeobotany and Palynology, 299, doi:10.1016/j.revpalbo.202](#)

[Zatoń, M., Hu, M., Di Pasquo, M., and Myrow, P.M., 2021, Adaptive function and phylogenetic significance of novel skeletal features of a new Devonian microconchid tubeworm \(Tentaculita\) from Wyoming, USA: Journal of Paleontology, 96\(1\), 112-126, doi:10.10](#)

[Hu, M., Myrow, P.M., Fike, D.A., Di Pasquo, M., Zatoń, M., Fischer, W.W., Coates, M., 2022, Depositional History of Devonian to Lower Mississippian Strata in Northern Wyoming and Southern Montana, USA, GSA Connects 2022 Denver \(abstract\).](#)

[Hu, M., Fike, D.A., 2022, Lateral and Secular Variability in \$\delta^{13}\text{C}\$ and \$\delta^{34}\text{S}\$ from the Upper Ordovician GICE interval: Midwest Geobiology Symposium 2022 \(abstract\).](#)

[Hu, M., Myrow, P.M., Fike, D.A., Di Pasquo, M., and Zatoń, M., 2021, Sedimentology, Stratigraphy, and Carbonate Chemostratigraphy of Devonian to Lower Mississippian Strata in Northern WY, USA: Midwest Geobiology Symposium 2021 \(abstract\).](#)

[Hu, M., Myrow, P.M., Di Pasquo, M., and Zatoń, M., 2021, Paleoecology and paleoenvironment of a peculiar microconchid tubeworm from the Devonian of Wyoming, U.S.A: XVII RAS Reunión Argentina de Sedimentología, 2021 \(abstract\).](#)

[Hu, M., Mcloughlin V.D., Bischoff, A., and Gravley, D.M., 2020, Reservoir properties of proximal pyroclastic rocks intruded by a trachytic dyke, Lyttelton volcanic complex, New Zealand: Geological Society of America Annual Meeting, USA, 2020 \(abstract\).](#)

RESEARCH EXPERIENCE

Graduate Researcher | Washington University in St. Louis, St. Louis, MO

Fall 2021–May 2023

- Proposed a model to explain temporospatial heterogeneities in $\delta^{13}\text{C}$ and $\delta^{34}\text{S}$ involving carbonate component mixing, open (closed) system diagenesis, sediment reworking intensity, and OM availability for microbial sulfate reduction.
- Performed multi-proxy analyses studying secular, spatial, and laboratory variabilities of isotopic signals in Upper Ordovician GICE strata ($\delta^{13}\text{C}_{\text{carb}}$, $\delta^{13}\text{C}_{\text{org}}$, $\delta^{34}\text{S}_{\text{pyr}}$, $\delta^{34}\text{S}_{\text{CAS}}$, and TOC%).
- Mapped XRF and XANES data for elemental and sulfur phases distribution in carbonate components.
- Proficiency in using Delta V Advantage mass-spectrometer coupled with both Gas Bench II and Costech ECS 4010 EA for stable isotope analysis.

Undergraduate Researcher | Colorado College, Colorado Springs, CO

Fall 2020–Summer 2021

- Multidisciplinary study using sedimentology, stratigraphy, paleontology, palynology and $\delta^{13}\text{C}_{\text{carb}}$ chemostratigraphy to reconstruct depositional history of Devonian–Mississippian strata in northern Wyoming and southern Montana.
- Proposed new depositional models revealing considerable diachroneity of the Devonian strata and an opposite polarity (S–N) of the previously suggested direction of transgression (N–S).
- Identified the Late Devonian *punctata* isotopic excursion and the Carboniferous TICE/KOBE Event for global strata and event correlations.
- Discovered a new genus and species of Microconchids, *Aculeiconchus sandbergi* n. gen. n. sp, from estuary deposits indicating stressed environments.

Undergraduate Researcher | University of Canterbury, Christchurch, New Zealand

Spring 2020

- Proposed matrix permeability controls from welding and fracturing of pyroclastic rocks.
- Identified six lithofacies from a scoria cone in Lyttelton Volcano, New Zealand and examined for petrology, porosity, and permeability.
- Developed proficiency in core drilling, use of Tiny-Perm, Steady State Permeameter, Pulse Decay Permeameter, and helium pycnometer.

Research Assistant | **Colorado College**, Colorado Springs, CO

January 2019–July 2019

- Prepared over 500 Mesoproterozoic carbonate samples from a Mesoproterozoic section in Helan Mt., Ningxia, China for $\delta^{13}\text{C}$ and $\delta^{18}\text{O}$ isotopic signatures.
- Familiarity with processing of carbon and oxygen isotope samples using Thermo Scientific Gas Bench and Thermo Scientific Delta V Plus mass spectrometers.
- Measured over 300 m stratigraphic section and collected over 600 isotope samples from the Mesoproterozoic successions in Ningxia, China over a month-long field work.

TEACHING EXPERIENCE

Paraprofessional | **Colorado College**, Colorado Springs, CO

August 2023–Present

- Assisted with instructing introductory and advanced classes of 20+ students, leading instructions for laboratory and field techniques.
- Classes to date include Sedimentology and Stratigraphy (GY 305), Geochemistry and Earth Materials (GY 211), and Field Analysis of Geological Structures (GY316).
- Planned, organized, and managed logistics during day and week-long field trips for the Geology Department.
- Graded various class assignments and served as a general help source for students.

Teaching Assistant | **Washington University in St. Louis**, St. Louis, MO

January 2022–May 2022

- Assisted with instructing Sedimentology and Stratigraphy with Dr. Tony Prave for 20+ students.
- Provided instructions to identify sedimentary rocks and structures, and to log sedimentary strata.

SOFTWARE SKILLS

- R
- Mathematica
- Matlab
- Adobe Illustrator
- Adobe Photoshop
- ArcGIS Pro
- Python
- IgPet
- Stereonet