

ACADEMIC CAREER

- Postdoctoral Scientist
National Museum of Natural History, Smithsonian Institute, November 2023 – present.
- Staff Scientist
University of Rochester, August 2022 – November 2023.
- Adjunct Professor
University of Rochester, August 2022 – December 2022.
- PhD, Geological Sciences
University of Rochester, August 2022
Thesis title: *Mineral-melt/fluid trace element partitioning as predictors of chemistry and geodynamic regimes of the Early Earth.*
Advisor: Dr. Dustin Trail
- MS, Geological Sciences
University of Rochester, July 2018
- Junior Research Fellow,
Physical Research Laboratory, Ahmedabad, August 2016- July 2018.
- MSc, Geological Sciences
Indian Institute of Technology, Kharagpur, 2014
Thesis title: *Osteoderms of a Late Triassic Phytosaur from India: New insights on their Palaeobiology.*
Advisor: Dr. Sanghamitra Ray
- BSc, Geological Sciences
University of Calcutta, 2012

RESEARCH EXPERIENCE

- Prospecting for, and in-situ and solution based chemical analysis of materials from the earliest time period of the Earth.
- Extensive experience in designing and performing high P/T experiments in experimental geochemistry, and material characterization using high precision instruments (LA-ICPMS, SIMS, SEM, XPS and Optical Microscopes).
- Experience in handling high-purity chemicals and fabrication of experimental parts that includes metals, glass, and ceramics.
- Multiple published results in peer-reviewed journals as well as presentations at international conferences implying the ability to explain complex subject matter to a wide audience.
- Competent in using MSOffice and various thermodynamic modelling, statistical and graphing software.
- Completed four short-term projects while at the Physical Research Laboratory, India:
 - Evidence for water on Mars: Citing the Sambhar Lake as a Terrestrial Analogue
Advisor: Dr. Amit Basu Sarbadhikari

- Petrographic study of a Martian meteorite – Tissint.
Advisor: Dr. Amit Basu Sarbadhikari
- Determining Sedimentation rate using Pb-210.
Advisor: Dr. Ravi Bhushan
- Chemical procedures for the separation of Uranium and Thorium for MC-ICP- MS measurements.
Advisor: Dr. Ravi Bhushan

PUBLICATIONS

- “Geochemical and textural investigations of the Eoarchean Ukaliq Supracrustals, Northern Québec (Canada).” Chowdhury, W., Trail, D., Guitreau, M., Bell, E. A., Buettner, J. and Mojzsis, S. J., *Lithos*, 372–373 (2020), Article 105673.
- “Boron partitioning between zircon and melt: Insights into Hadean, modern arc, and pegmatitic settings.” Chowdhury, W., Trail, D. and Bell, E. A., *Chem. Geol.*, 551 (2020), Article 119763.
- “Eoarchean and Hadean melts reveal arc-like trace element and isotopic signatures.” Chowdhury, W., Miller, M., Trail, D., Savage, P., *Nat. Commun.* 14 (2023), Article 1140.
- “A new experimental monazite-xenotime thermometer: Application to metamorphic environments.” Chowdhury, W. and Trail, D., *Chem. Geol.*, 648 (2024), Article 121939.
- “Crustal Fluids define the Atmosphere-Crust redox divide since the Neoproterozoic”. Chowdhury, W., Gravlee, S. and Trail, D. (*In review at Nature Communications*)

CONFERENCE PRESENTATIONS & INVITED TALKS

- “Monazite-xenotime Y+ REE partitioning as a marker of ancient metamorphic conditions” Chowdhury, W., and Trail, D. Goldschmidt 2021.
- “Si and O isotopes in Jack Hills zircons: Hadean lithologies and tectonics..” Chowdhury, W., Miller, M., Trail, D., Savage, P. AGU Fall meeting 2021.
- “Rutile-fluid trace element partitioning as an fO_2 indicator.” Chowdhury, W., Gravlee, S., Trail, D., Kirkpatrick, H., Elizabeth, B. Goldschmidt 2022.
- Prebiotic Chemistry and Early Earth Environments Consortium, Virtual Talk (2023), (<https://www.youtube.com/watch?v=ZEJxycKcQ7E&t=1763s>).

INSTRUCTING, ADVISING AND OUTREACH EXPERIENCE

- Experience in teaching students in a classroom, laboratory, and outdoor field setting.
- Designed a BS level course and delivered lectures on Petrology and Mineralogy to undergraduates as an Instructor and a Teaching Assistant.
- Delivered lectures and led undergraduates in petrology and mineralogy labs that included thin section descriptions and interpretation, hand sample descriptions, crystallography block models and stereographic projections as a Teaching Assistant (August 2016 - 2017).
Courses: EES 206: Petrology (20 hours/week), EES 204: Earth materials (20 hours/week).
- Assisted undergraduate/graduate students in experimental lab and analytical protocols. This included assisting in End-loaded Piston Cylinder experiments, fabrication of parts required for experiments, handling of high purity chemicals, precious and base metals. Assisted in analyses using high precision instruments such as an LA-ICPMS and SEM.

- Participated in outreach programs to demonstrate laboratory capabilities to local High school teachers and departmental benefactors.
- Worked closely with Foodlink, a Rochester based non-profit that helps refugees assimilate, to provide solutions to urban farms.

HONOURS AND AWARDS

- *Geological Society of America Graduate Student Research Grant. (March 2019).*
- *Best MSc. (Geology) Thesis Award, IIT, Kharagpur (2014).*
- *NET (National Eligibility Test) all-India rank: UGC-JRF 57. Eligible for Fellowship (December 2014).*
- *IIT-GATE (Graduate Aptitude Test in Engineering) all-India rank: 62 (2014).*
- *Academic Scholarship for MSc. Students at IIT, Kharagpur (2012-2014).*
- *IIT-JAM (Joint Admission test for MSc.) all-India rank: 19 (2012).*

SOCIETY MEMBERSHIPS

European Association of Geochemistry, American Geophysical Union, Geological Society of America and Mineralogical Society of America.

LANGUAGE SKILLS

BENGALI (Native), HINDI (Fluent), ENGLISH (Fluent), FRENCH (Beginner), GERMAN (Beginner).