

Gustavo Villarruel

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EDUCATION

PhD in Earth and Planetary Sciences • McGill University • Aug 2023 – present

Thesis: Drone applications in natural and anthropogenic hazards.

Advisor: Prof. Dr. John Stix (john.stix@mcgill.ca)

MS in Geology • Fulbright Scholar in State University of New York at Binghamton • Jan 2021 – Dec 2022

GPA: 4.0 (0-4 scoring scale).

Thesis: Detailed sedimentology and chemostratigraphy of the Trenton Group limestones in the Mohawk Valley of New York

Advisor: Prof. Dr. Jeffrey T. Pietras (jpietras@binghamton.edu)

BS in Geology • National University of Cordoba, Argentina • Mar 2012 – Mar 2018

GPA: 9.41 (0-10 scoring scale).

Thesis: Water repellency in soils affected by fire and comparison with heating experiments.

Advisor: Prof. Dr. Gabriela Sacchi (gsacchi@unc.edu.ar)

PROFESSIONAL EXPERIENCE

Teaching Assistant at McGill University

- EPSC 221 - General Geology – Fall 2024 and Fall 2023. Reference: Prof. Jeanne Paquette
- ESYS 104 – The Earth System – Winter 2024. Reference: Prof. William Minarik

Junior Geologist at Represas Patagonia (Patagonia Dams) • Santa Cruz, Argentina • Sep 2020 – Jan 2021.

Performed slope stability and landslide risk analysis, geotechnical logging, description of trial pits and well supervision.

Reference: Geologist Diana Boero (dboero@represaspatagonia.com.ar)

Laboratory Analyst at CEPROCOR • Cordoba, Argentina • Apr 2019 – Mar 2020

Determined trace elements in soils and aqueous samples by spectroscopic techniques: ICP-MS and FAAS. Acquired training in the use of gas chromatography, XRF and FTIR. Reference: MS. Marcela Inga (marcela.inga@cba.gov.ar)

Geologist Internship at Environmental Mining Department of Cordoba • Argentina • Jun 2017 – Dec 2017

Evaluated environmental impact reports from mines and quarries and collaborated on the field inspections thereof. Wrote technical reports for the issue of environmental license for mining companies. Reference: Geologist David Palacio

(davidhpalacio@gmail.com)

Teaching Assistant in Igneous and Metamorphic Petrology at National University of Cordoba • Argentina • Mar

2016- Dec 2016. Reference: Dr. Alina Guerreschi (alina.guerreschi@unc.edu.ar)

CERTIFICATIONS AND TRAINING

- **Certification in first aid** in wilderness & CPR/AED Level C. Canadian Red Cross. May 2024.
- **European drone pilot license**. A1/A3 open sub category. Issued by EASA: European Union Aviation Safety Agency. Feb 2024.

- **Canadian drone pilot license.** Small Remotely Piloted Aircraft System (RPAS), Visual line-of-sight (VLOS). Issued by Transport Canada. Jan 2024
- **Environmental Resilience: Protecting the Natural Environment of San Diego and Beyond.** Fulbright Enrichment Seminar. Sep 2022.
- **Bartle Field Trip: Volcanology, Glaciology and Climate Change in Iceland.** Professors: Tim Lowenstein, Howard Naslund and Kennie Leet. Jun 2022.
- **Geospatial Applications for Disaster Risk Management.** Massive Online Open Course (MOOC) imparted by the Centre for Space Science and Technology Education for Asia and the Pacific and the United Nations. Aug 2021.
- **Energy Transition: Innovation Towards a Low-Carbon Future.** MOOC offered by IFP School with the support of Total Energies. Feb 2020.

HONORS AND AWARDS

- **Fonds de Recherche du Québec** – Nature and Technologies (FRQNT) doctorate scholarship. Jun 2024.
- **Best presentation** at McGill University Earth and Planetary Science Symposium. Apr 2024.
- **GREAT Travel Award and Graduate Mobility Award:** research travel awards from McGill University to conduct fieldwork in Campi Flegrei volcano, Italy. Mar 2024.
- **Kenneth N. Weaver Student Travel Award** of the Northeastern Section of the Geological Society of America (GSA). Travel award for research presented in the GSA annual meeting. Oct 2022.
- Scholarship granted by the **Fulbright Commission and the Ministry of Education of Argentina** to pursue graduate studies in the U.S. Jun 2019.
- Recognition of the National University of Cordoba for achieving the **highest GPA** out of all natural sciences candidates in the class of 2018. Jun 2019.

PUBLICATIONS

- Villarruel, G., Sacchi, G.A., and Zampar, V.P. 2022. Water repellency in soils affected by fire and comparison with heating experiments. Journal of the School of Exact, Physical and Natural Sciences from the National University of Cordoba, 9(2), 69-76.

CONFERENCES AND PRESENTATIONS

- **McGill University Earth and Planetary Science Symposium.** Oral presentation “UAS deployment to study the vertical distribution of greenhouse gases (GHG) in Montreal”. Apr 2024.
- **Geological Society of America Annual Meeting.** Oral presentation “Water repellency in soils affected by wildfires: a case study in Calamuchita Valley, Argentina” and poster presentation “Hardground formation in the Rust Formation of the Trenton Group in the Taconic foreland basin, New York”. Denver, USA. Oct 2022.
- **Houston Geological Society Student Expo.** Oral Presentation “Sedimentology and Geochemistry of the Trenton carbonates in the Taconic foreland basin, New York”. Houston, USA. Sep 2022.
- **XIII Argentine Congress of Mineralogy, Igneous and Metamorphic Petrology and Metallogenesis.** Student attendee. Cordoba, Argentina. Aug 2019.
- **3rd Argentine Congress of Aggregates.** Cordoba, Argentina. Assistant and member of the organization committee. Nov 2017.

PROFESSIONAL ASSOCIATIONS

- Geological Society of America. Aug 2021 – present.
- President of the Student Chapter of Binghamton University. Aug 2021 – Dec 2022.

LANGUAGES

English: Proficient • Spanish: Native • French: Proficient

COMPUTER SKILLS

Microsoft Office • Adobe Illustrator • ArcGIS PRO • QGIS
• Global Mapper • Surfer • Petrel • GeoGraphix • Python

VOLUNTEERING

- **Social representative** of the graduate student organization of McGill University's Earth and Planetary Sciences department. I organized social and recreational events to bring the department's academic community together. Since Sept 2023.
- **Masters Argentina.** Organization of Argentinean graduate students from foreign universities aimed to contribute to the development of their home country through a network of professionals and policy makers. Oct 2021 – Apr 2022.
- **Education program "Nunca Es Tarde (NET)".** Tutored children and teenagers from low-income families. May 2018 – Mar 2020.
- **Ñuke Mapu Asociación Civil.** Guided museum tours on academic exhibitions about responsible use and management of water and energy resources. Aug 2014 – Nov 2014