SAMIRA RIFAT PROVA

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EDUCATION

West Virginia University, West Virginia December 2025

Master of Arts in Geography; GPA: 3.36/4.00

Bowling Green State University, Ohio August 2023

Master of Science in Geology; GPA: 3.75/4.00

University of Dhaka

Master of Science in Geology; GPA: 3.17/4.00 July 2019

Bachelor of Science in Geology; CGPA: 3.17/4.00 November 2017

SKILLS

Laboratory instrumental skills

- **Carbon analyzer** -Solid State Module and Autosampler liquid state.
- Used to identify organic carbon concentration from soil-extracted organic matter powder and solution.
- **Aqualog optical Fluorescence spectrometer-** Used to identify soil organic matter type from the soil-extracted organic matter solution.
- **Fourier-transform infrared spectroscopy-** Used to identify the organic compounds' functional groups within the soil-extracted organic matter.
- **Gas chromatography-** Initial experience identifying the organic compounds in soil-extracted organic matter.

Software Experience

ArcGIS Pro, R-software, OriginPro, SOLO for PARAFAC analysis, Adobe Photoshop, and Microsoft Office Suites.

Field and Sample Handling: Groundwater, soil, and sediment sampling, as well as the safe handling of chemicals and hazardous materials.

Communication & Management: Teaching assistant experience, training, Lab management, and supervising undergraduates.

Relevant Courses: Aqueous Geochemistry, Soil Science, Karst Geology, Geospatial Modeling, Open-Source Spatial Analytics, Remote Sensing.

RESEARCH EXPERIENCE

Characterization of humic suprastructures in the dredged sediment by Humeomics and fluorescence spectroscopy, **2021- 2023**.

Supervisor: Angelica Vazquez Ortega, Associate Professor, Aqueous Geochemistry lab, School of Earth, Environment and Society, Bowling Green State University.

- Working as a Graduate Research Assistant, collected dried lake sediments used for chemical sequence extractions of soil organic matter (SOM). Extracted fractions go through organic carbon analysis and total

nutrients and humic substances analysis with fluorescence spectroscopy. Additionally, organic functional groups were identified in the SOM using FTIR spectroscopy.

- Collaborated with the Chemistry Department at the Center for Photochemical Science, Bowling Green State University, to extract organic matter from soil samples using an aqueous extraction process. Trained students on the Carbon Analyzer -Solid State Module and Autosampler for liquid state analysis. Provided training on soil characterization for the chemical extraction method of soil organic matter.

Characterizing spatiotemporal changes in water extent in Chandpur City, Bangladesh, using Sentinel-2 MSI data.

Supervisor: Dr. Aaron Maxwell, Associate Professor| Department of Geography, West Virginia University, WV.

- Spatiotemporal water extent dynamics and riverbank erosion in the Chandpur region of Bangladesh using Sentinel-2 imagery. I conducted remote sensing analysis, supervised classification, accuracy assessment, and GIS-based spatial interpretation of channel changes.

Graduate Research Assistant (GIS Technician), WV GIS Tech Center, West Virginia University, WV, 2023- 2025.

- Managed the archival of State transportation maps by performing high-resolution scanning, image processing, PDF generation, and georeferencing utilizing ArcGIS.
- Conducted QA/QC on digitized State Transportation maps prior to publication on the WV Highways Map site.

Assessment of Groundwater Resource Potential for the Water Supply of Palash Upazila 2017- 2019. Supervisor: Dr. Muhammad Qumrul Hassan, Professor, Department of Geology, University of Dhaka. Co-supervisor: Anwar Zahid, Director, Groundwater Hydrology, Bangladesh Water Development Board.

- Collected water samples, analyzed physicochemical parameters, and studied with ICP-MS and ASS to characterize the water type and quality. Furthermore, secondary long-term rainfall data were analyzed to inform discharge and recharge conditions.

TEACHING EXPERIENCE

Graduate Teaching Assistant, Department of Geology and Geography, West Virginia University, WV, 2024-2025.

- Responsible for introductory geology lab classes, short field trips, and exams of undergraduate students.

Graduate Teaching Assistant, School of Earth, Environment, and Society, Bowling Green State University, Ohio, 2021-2023.

- Responsible for introductory and historical geology lab classes, short field trips, and exams of undergraduate students.

TECHNICAL PRESENTATIONS

- **Characterizing and comparing the molecular composition of extractable humic material in an organic farm soil and lake-dredged sediments:** 22nd Meeting of the International Humic Substanced Society (IHSS), Rimini, Italy, August 2024.
- **The Supramolecular Nature of Organic Matter from Lake Dredged Material By Humeomics: A Spectroscopic Approach**: ASA-CSSA-SSSA International Annual Meeting (2023), St. Louis, MO, USA, November 2023.
- **Characterization Of Supramolecular Humic Material Obtained From Lake Dredged Sediments By Humeomics and Spectroscopy Methods**. https://doi.org/10.1130/abs/2022AM379815: Poster presentation at the technical session; Geological Society of America (GSA) Connect 2022, October 2022.