

## MD RIAZ UDDIN

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[Google Scholar](#)

## RESEARCH INTERESTS

My research interests primarily focus on Sediment Mineralogy, Groundwater Geochemistry, Climate Change, Water Quality Monitoring, Environmental Risk Assessment, Geospatial Data Analytics, GIS Modeling, and Environmental Sustainability. I am dedicated to developing skills for designing and implementing real-world applications and gaining hands-on experience with widely used GIS software such as ArcGIS, ArcGIS Pro, GeoDA, ENVI, etc. My strong interest in applying machine learning using Python, R, and Google Earth Engine further demonstrates my research commitment to earth and environmental geosciences.

## EDUCATION

August 2021-

Present

[Auburn University, Alabama, USA](#)

Department of Geosciences

PhD in Earth System Science (In progress)

MS in Geology (Completed on August 05, 2023)

GPA: 3.91 out of 4.0 (current)

**MS Thesis Topic:**

Geochemistry and Mineralogy of Contaminant Groundwater and Sediments from Coastal Aquifers of Southwest Bangladesh

2013

**University of Dhaka, Bangladesh**

MS in Geology (Specialization on Hydrogeology)

**Thesis Title:**

Evaluating the influence of hydrogeology and physiography on waterlogging in southwest regions of Bangladesh

2009-2012

**University of Dhaka, Bangladesh.**

Bachelor of Science in Geology

## PROFESSIONAL EXPERIENCES (Duration, Designation, Institution, Major Responsibilities)

August 2021-

Present

**Graduate Teaching and Research Assistant**

[Auburn University, Auburn, AL, 36849, USA](#)

- Performing weekly lectures with designated topics of an undergraduate lab course titled “Dynamic Earth”
- Grading exams, homework, and class projects in canvas
- Proctoring lecture and lab examinations
- Preparing instructional materials
- Providing other general assistance to the students in the instructional process
- Sedimentological assessment and geochemical analysis in the Himalayan Research Laboratory

May 2020 –

December 2020

**Research Consultant**

[CEGIS \(Remote Sensing Division\), Agargaon Administrative Area, Dhaka-1207, Bangladesh](#)

- Analyzed satellite images with visual interpretation
- Performed on screen digitization and feature extraction from satellite images
- Prepared ESRI supported GIS shape file preparing, editing and topology building
- Conducted field survey within the city corporation areas as per requirement of the assignment

June 2016 –  
May 2018

**Investigator**

**International research project funded by USAID & [Pure Earth, USA](#)  
Bangladesh Office; Block-A, Lalmatia-1205, Bangladesh**

- Managed country office effectively
- Conducted field visits, collected water and soil samples, and identified source of toxic pollutants
- Analyzed geochemical properties of soil sample in the field & laboratory
- Prepared graphic charts and required visual representations for final reports
- Performed spatial analysis, hotspot analysis and GIS mapping for environmental health safety
- Participated risk-reduction activities to prevent exposures from lead-contaminated soil and dust.

January 2014 –  
January 2016

**Research Assistant**

**Remote Sensing & GIS Laboratory, Department of Geology, University of Dhaka, Dhaka-1000, Bangladesh**

- Developed project proposal and made fund raising efforts for qualitative research.
- Planned and implemented annual budget plan for smooth project execution.
- Visited field regularly for questionnaire survey with community-based stakeholders.
- Assisted statistical data collection, data processing, and corrected problems with GIS application.
- Accessed regional databases to collect information for spatial analysis and prepared final reports.

**PUBLICATIONS & CONFERENCE PRESENTATIONS**

- Uddin, A<sup>1\*</sup>, Uddin, M.R<sup>1</sup>, Zahid, A<sup>2</sup>, Sakib, N<sup>2</sup>, Haque, M.M<sup>2</sup>, 2024, Evolution of coastal islands at the bengal basin: geochemistry, sediment composition, subsidence, and sea level changes at Sandwip island, Chittagong, Bangladesh: GSA Annual Conference, Anaheim, California, 22-25 September 2024; Topical Presentation Session 222: T183. Climate and Tectonic Interactions from Bedrock to Basins; Geological Society of America Abstracts with Programs, Vol. 56, No. 5, doi: [10.1130/abs/2024AM-405084](https://doi.org/10.1130/abs/2024AM-405084) .
- **Uddin, M.R<sup>1</sup>**, Uddin, A<sup>1\*</sup>, Lee, M.K<sup>1</sup>, Nelson, J<sup>1</sup>, Zahid, A<sup>2</sup>, Haque, M.M<sup>2</sup>, Sakib, N<sup>2</sup>, 2024, Geochemistry of Arsenic and Salinity-Contaminated Groundwater and Mineralogy of Sediments in the Coastal Aquifers of Southwest Bangladesh: Water 16, no. 10: 1442, <https://doi.org/10.3390/w16101442>.
- Mahmud, I.M.,<sup>1\*</sup> Jafor, M.A<sup>1</sup>, **Uddin, M.R.<sup>2</sup>**, Rahman, M.M<sup>2</sup>, Rahman, M.H<sup>3</sup>, 2017, Assessment on seasonal variations in waterlogging using remote sensing and GIS techniques in Satkhira District in Bangladesh” Barishal University Journal Part 1, Volume 4, Issue 1, ISSN 2411-247X: pp 67-80, June 2017. <https://bu.ac.bd/uploads/BUJ1V4I1/7.%20Illias%20Mahmud.pdf>
- Hasan, M. Aziz<sup>1</sup>, Sikder, Arif M.<sup>2</sup>, Kabir, M. Lutful<sup>1</sup>, Jaman, M. Hasnat<sup>1</sup>, **Uddin, M. Riaz<sup>1</sup>**, Rashid, M. Hashibur<sup>1</sup>, Akter, Asma<sup>3</sup>, Liu, Xin-Chen<sup>4</sup> and McCartor, Drew<sup>5</sup>, 2017, Soil pollution from informal recycling of used Lead-acid battery in Bangladesh: GSA Annual Conference, Seattle, Washington, USA, 22-25 October 2017. Topical presentation session 301-T35, Urban Geochemistry, paper number 16. Geological Society of America Abstracts with Programs. Vol. 49, No. 6, [doi: 10.1130/abs/2017AM-302812](https://doi.org/10.1130/abs/2017AM-302812)

**TECHNICAL SKILLS**

- Programming languages: Python (learning stage), Google Earth Engine (learning stage)
- Microsoft Office: Word, Excel, PowerPoint
- Google Suite (Docs, Sheets, Slides, Forms)
- Basic Knowledge of non-destructive elemental analysis by XRF, XRD, SEM and ICP-MS
- Software proficiency on ArcGIS, ArcGIS pro, QGIS, Erdas Imagine, SPSS, Minitab, Google Earth Pro, DIFFRAC.EVA

## GRANTS & AWARDS

- Received GAB Student Research & Travel Grant 2022 and COSAM Travel Award 2022 from the Geosciences Advisory Board & [College of Science and Mathematics respectively at Auburn University, AL](#).
- Awarded [Graduate Student Research Grant 2022 and 2024 by the Geological Society of America](#).
- Received [On To the Future \(OTF\) Travel award for 2022 , 2023, & 2024 cohort by the Geological Society of America](#) to attend GSA Connects 2022 at Denver, Colorado & 2023 at Pittsburgh, PA, USA.

**FIELD EXPERIENCES** Participated in several field trips each year during my undergraduate level with University of Dhaka, Bangladesh. Completed Geological mapping, and sedimentological assessment of Eastern Hill Tracks of Bengal Basin as a part of mandatory undergraduate coursework.

## PROFESSIONAL MEMBERSHIPS

- [Sigma Gamma Epsilon, Auburn University](#), Member since November 2022 - Present
- [Geological Society of America](#), Student Member since January 2022 - Present
- [American Association of Petroleum Geologists](#), Student Member since January 2022 - Present

## TRAINING, WORKSHOPS & MENTORSHIP EXPERIENCES

- Served as a Senior Judge in the [Alabama Science and Engineering Fair \(ASEF\)](#) at Auburn University on April 13, 2024.
- Participated in a weeklong teaching and learning workshop titled "[Auburn University Summer STEM Institute \(AUSSI\)](#)" facilitated by the [Auburn University Biggio Center](#), funded by National Science Foundation, during July 8 -12, 2024.
- Participated in a weeklong teaching and learning workshop titled "[Course Redesign \(CRD\)](#)" facilitated by the [Auburn University Biggio Center](#), during May 8-14, 2024
- Professional training on Responsible Conduct of Research for Physical Science offered by Collaborative Institutional Training Initiative (CITI) on 21 October 2021. Record ID: 45737551. <https://www.citiprogram.org/verify/?wdce51556-6b16-4c46-bddf-bbf894ca0c89-45737551>
- Completed a professional Training Course on GIS October 2017–December 2017 [Department of Geography and Environment](#), University of Dhaka, Dhaka-1000, Bangladesh.
- Attended a daylong workshop on "Research Methodology & Scientific Paper Writing" organized by Dhaka University Science Society (DUSS), held on November 11, 2017.