

SHISHIR K. SARKER

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Education

Ph.D. in Geological Sciences (Conc: Hydrogeology) August 2019 -Present
 University of Kentucky, Lexington, KY GPA 3.83
 Mentor - Dr. Alan Fryar

Master of Science in Environmental Studies July 2018
Graduate Certificate in Water, Environment, and Development Studies GPA 3.52
 Florida International University, Miami, FL
 Mentor - Dr. Rene Price

Master of Science in Physical Geography August 2014
 University of Dhaka, Bangladesh GPA 3.33

Bachelor of Science in Geography and Environment February 2013
Minor in Geology CGPA 3.16
 University of Dhaka, Bangladesh

Publications

- Dapkus, R.T., Fryar, A.E., Tobin, B.W., Byrne, D.M., **Sarker, S.K.**, Bettel, L., Fox, J.F. (2023). Utilization of Tryptophan-Like Fluorescence as a Proxy for *E. coli* contamination in a Mixed-land-use karst Basin. *Hydrology*, 10, 74. <https://doi.org/10.3390/hydrology10040074>
- **Sarker, S.K.**, and Fryar, A.E. (2022). Characterizing Hydrological Functioning of Three Karst Springs in the Salem Plateau, Missouri. USA. *Hydrology* 2022, 9, 96. <https://doi.org/10.3390/hydrology9060096>
- **Sarker, S.K.**, Kominoski, J.S., Gaiser, E.E., Scinto L.J., Rudnick, D.T. (2019). Quantifying effects of increased hydroperiod on wetland nutrient concentrations during early phases of freshwater restoration of the Florida Everglades. *Restoration Ecology*, 28(6), pp.1561-1573. <https://doi.org/10.1111/rec.13231>
- **Sarker, S.K.** (2018). "Spatial and Temporal Distribution of Total Phosphorus Concentration in Soil and Surface Water in the Everglades Protection Area." *FIU Electronic Theses and Dissertations*. 3742. <https://digitalcommons.fiu.edu/etd/3742>

Skills

- **Programming:** R (Advanced), MATLAB (Basic), Python ArcPy (Basic)
 - **GIS and R.S.:** ArcGIS Desktop 10.8, QGIS 3.10, ArcGIS Pro 3.0, ArcGIS Online, Google Earth Engine
 - **Laboratory Equipment:** IDEXX, Microbalance, Electronic Microscope
 - **Field Equipment:** YSI, Water pump, Handheld data logger, Pressure Transducer, Garmin GPS, pH meter
 - **Others:** Sigma Plot 14, M.S. Excel, MS Access
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Workshop and Training

- Critical Zone (C.Z.) Research Coordination Network (RCN) Florida Field Workshop, April 4-6, Gainesville, FL
- Chain of Custody (COC) field and laboratory training January 2019 South Florida Water Management District, West Palm Beach, FL
- NOAA Coastal Inundation Mapping, Biscayne Bay Campus, FIU. December 12 – 13, 2016
- D.B. hydro Environmental Database Training, SFWMD, West Palm Beach. September 2016

Professional Experiences

Graduate Teaching Assistant

August 2019 – Present

Department of Earth and Environmental Sciences

The University of Kentucky, Lexington, KY

- **Lecture and Grading Teaching Assistant** — Oceanography: The Blue Planet (Fall 2022, Spring 2022), Environmental Geology (Spring 2022), Earthquake and Volcano (Fall 2021), Geology for Teachers (Spring 2021, Fall 2020, Spring 2020), Environmental Geology (Fall 2019)
- **Lab Instructor** – Principle of Physical Geology (Spring 2021)

Research Assistant

Summer 2021 and Summer 2022

Kentucky Research Consortium for Energy and Environment (KRCEE),

Center for Applied Energy Research (CAER), University of Kentucky, Lexington, KY

- Modified a long-term hydro-stratigraphic database to create groundwater flow maps
- Compiled newly surveyed lithological logs to the modified database

Research Technician (Ecosystem ecology Lab)

October 2018 – August 2019

Institute of Environment, Florida International University, Miami, FL

- Led field sampling on surface water, soil, sediment, floc, and Plants in the Northeast Shark River Slough (NESRS) at the Everglades National Park (ENP)
- Processed soil and water samples and perform laboratory analysis to assess the impact of seasonal variability on ecosystem metabolism and biogeochemical properties of surface water, soil, floc, and plants in the NESRS at ENP
- Developed a long-term database and conducted GIS analysis to support annual reports, charts, graphs, and customized maps.

Graduate Research Assistant (Hydrogeology Lab)

August 2017 – July 2018

Department of Earth and Environment

Florida International University, Miami, FL

- Utilized Geographic information system (GIS) to create detailed contaminant (e.g., T.P.) distribution maps for analyzing water quality and soil chemistry trends in the Everglades ecosystem.
- Collected surface water and groundwater samples to measure chemical constituents (major cations and anions) and isotopic composition to trace groundwater movement.
- Recorded water quality data by YSI and Sonde, transferred data to the spreadsheet, and produced charts, graphs, and hydrologic maps.

Graduate Teaching Assistant (Instructor, Environmental Science)

August 2016 – July 2017

Department of Earth and Environment

Florida International University, Miami, FL

- Taught measurement of ocean acidification, uses of colorimeter to measure tannin level, water hardness, total phosphate, ammonia-nitrogen, etc., uses of air quality meter, uses of pH meter, etc.
- Provided lectures on biological pollution, air pollution, energy and environment, environmental shopping, etc.
- Mentored students' final research projects and graded weekly lab reports.

GIS Analyst

September 2014 – June 2016

Sheltech Consultants (Pvt.) Ltd.

Dhaka, Bangladesh

- Created, edited, and managed the GIS data layer.
- Digitized cadastral maps, transferred, and imported data between graphic file formats (geo-referencing)
- Coordinated land use and environmental surveys based on geo-rectified maps (e.g., Cell Locations)
- Analyzed surveyed data and designed and created maps and reports through GIS analysis.
- Provided training and support to department personnel on the use of GIS applications.

Intern

June 2013 – August 2013

NASA DEVELOP National Program

International Center for Mountain Development Organization

Katmandu, Nepal

- Obtained and analyzed GIS and Remote Sensing data and produced land use maps for decision support monitoring threats to CHT, Bangladesh.
- Coordinated team members remotely from three different locations such as Bangladesh, Nepal, and the USA

Leadership Experiences

- **Co-Chair**, Professional Development and Networking Committee, GSC, University of Kentucky August 2021 – May 2022.
- **President**, Bangladesh Student Association (BSA), University of Kentucky, August 2021 – July 2022.
- **President**, Sigma Gamma Epsilon, Chi Chapter, University of Kentucky. May 2021 – Present
- **Graduate Student Representative, Planning Committee**, Graduate Career Consortium (GCC) Southeast Region 2022, Hosted by the University of Kentucky, March 7-8, 2022, Gatton Student Center, Lexington, KY.
- **Geoscience Graduate Group Representative**, GSC, University of Kentucky August 2020 – Present
- **Treasurer**, FCE LTER Student Organization, Florida International University, Miami, FL May 2017 – May 2018
- **Founding Secretary**, Environment Club, University of Dhaka, Bangladesh. May 2012 – July 2013

Professional Membership

- International Association for Hydrogeologist (IAH) United States National Chapter August 2019 – Present

- National Ground Water Association (NGWA)
August 2020 — Present
- Geological Society of America (GSA)
August 2020 — Present
- American Geophysical Union (AGU)
August 2021 — Present
- Kentucky Climate Consortium (KYCC)
September 2022 — Present
- National Cave and Karst Research Institute (NCKRI)
November 2022 — Present