

Mohammed Riajul Islam, Ph.D.
 Adjunct Faculty
 Department of Crop & Soil Sciences
 271 Johnson Hall
 Washington State University
 Pullman, WA 99164-6420 USA
 Tel. (509) 335-3036 (Office)
 (509) 432-9547 (Cell)
 Fax: (509)335-8674
 E-mail:islam@wsu.edu

Education:

University of Oulu, Finland; Institute of Geosciences - Ph.D. – Surficial Geology (Chemical weathering) - 1996
 University of Oulu, Institute of Geosciences, - Lic. in Phil., Surficial Geology - 1996
 University of Rajshahi, Bangladesh; Department of Geology & Mining - M.Sc. – 1988.
 University of Rajshahi, Department of Geology & Mining - B.Sc.(Hons.), Chemistry and Zoology as subsidiary subjects – 1985.

Teaching Experience/ Presentations:

- Taught **"WATER QUALITY (SOIL 502)" Advanced Topics in Soils, 3 Credits** in the Department of Crop & Soil Sciences, Washington State University; Summer 2019.
- Taught **"Hydrogeochemical Field Course: Environmental Contaminants in the Pacific Northwest (SOIL_SCI 502)"** (1 Credit) in the Department of Crop & Soil Sciences, Washington State University; Summer 2017.
- Taught **"WATER QUALITY (CE 543) Advanced Topics in Civil & Environmental Engineering Practice, 3 Credits** in the Department of Civil & Environmental Engineering, Washington State University; Summer 2015.
- Taught **"Clay Minerals in the Environment (SOIL_SCI 502.02, Advanced Topics in Soils, 2 Credits)"** Department of Crop & Soil Sciences, Washington State University, Summer 2014.
- Taught **"Applied Environmental Geochemistry of Toxic Metals (SOIL_SCI 502.03) Course: Advanced Topics in Soil Sciences (3 Credits)"** in Fall, 2013 in the Department of Crop & Soil Sciences, WSU.
- Have taught a class in Fall, 2008– **"Applied Environmental Geochemistry of Toxic Metals (CE 543): Advanced Topics in Environmental Engineering Practice (3 Credits)"** in the Department of Civil & Environmental Engineering, Washington State University.
- Taught also Environmental Geochemistry course occasionally to the undergraduate / graduate students at Helsinki University of Technology in Engineering & Economic Geology (1997).

Research Experience:

- **Department of Crop and Soil Sciences, Washington State University (WSU)** –Adjunct Faculty teaching Graduate courses on environmental geochemistry/hydrogeochemistry, water quality, clay mineralogy and conducting research on arsenic contamination of groundwater in Bangladesh and its impacts on human health, agro-environmental cadmium and other heavy metal contamination of surface and groundwater in Sri Lanka. September 2013 –

- **Department of Animal Sciences, WSU** – Researcher – conducting biogeochemical/arsenic research in Bangladesh. April 16, 2013 – August, 2013.

- **Institute of Biological Chemistry (IBC), WSU** – Postdoctoral Research Associate – conducting environmental biochemical and molecular plant biological research dealing mainly with phosphate and arsenic interactions/metabolisms in plants. April 16, 2011 – April 15, 2013.

- **Department of Chemistry, WSU** – Postdoctoral Research Associate – conducting environmental radioanalytical research dealing with technetium (Tc) extraction (solvent extraction method) in anaerobic condition (glove box). April 16, 2010 - March 15, 2011.

- **Department of Animal Sciences, WSU (in collaboration with the Biological System Engineering Department, Civil & Environmental Engineering Department, WSU, and the Geological Survey of Finland)** – Postdoctoral Research Associate –Performing research in environmental geochemistry/hydrogeochemistry/biogeochemistry of arsenic (other heavy metals) in the latest Bangladesh arsenic calamity (contamination of groundwater, surface water, soils, meat, fish, and vegetable, etc.) and biochemistry of fat/tissue of beef samples.

Department of Animal Sciences and Department of Food Science and Human Nutrition, Washington State University (Postdoctoral Research Associate) - conducting research in environmental microbiology, food-safety (pathogens in ground beef and ground turkey), and biochemistry (fat/tissue analyses of beef samples using GC). April 1, 2007 –April 15, 2010.

- **Department of Geology, Washington State University (WSU)** – Postdoctoral Research Associate –conducting astrobiological (atmospheric pathogens) and eco-hydrological research. October 1, 2005 – March 2007.

- **University of Idaho(UI), Department of Animal and Veterinary Sciences-** Research Support Scientist - studying animal physiology using the molecular technique. June –September 2005.

Department of Plant, Soil, and Entomological Sciences (PSES) – Postdoctoral Researcher/ Research Support Scientist - studying solute and contaminants transport into groundwater; effects of soil freezing – thawing in transporting agrochemicals and sediments into surface and groundwater; and geochemistry, mineralogy and environmental soil physical studies of Martian dust (NASA funded research project) from July 2002 - May 31 2005.

Department of Biological Sciences, UI - Postdoctoral Researcher – studying atmospheric mercury deposition in Svalbard Island, Norway and an environmental microbiological (human vaginal microbial ecology) studies; October 2002 to April 2003 (75 % of the time).

Environmental Biotechnology Institute (Environmental Chemistry and Toxicology Lab.), UI – Postdoctoral Research Associate – Studying toxic effects of selenium on livestock impacted by phosphate mining in south-east Idaho and treatments (including bioremediations) of selenium-contaminated soil and water; August 1, 2001-July 5, 2002.

- **Department of Crop & Soil Sciences, Washington State University**, – Adjunct Faculty (Soil Chemistry); June 1 – July 30, 2001.

Department of Crop & Soil Sciences, WSU – Postdoctoral Researcher – Studying uptake of arsenic by plants and arsenic toxicity in plants; January – May, 2001.

Department of Geology, WSU – Postdoctoral Research Associate – Studying groundwater and surface water contamination by non-point sources (agricultural pesticides and fertilizers) in Washington State, USA. The research is mainly based on isotopic hydrogeochemical ($^{18}\text{O}/^{16}\text{O}$ ratio of water sample) study. Other research was carried out with organic contaminants transport to groundwater aquifer in Borden area, Canada. Study of aquifer heterogeneity by sedimentary facies was the main area of the research; May – December 2000.

- **Duke University, Nicholas School of the Environment, Division of Earth and Ocean Sciences** - Postdoctoral Research Scholar - Studying disastrous arsenic and other toxic/heavy metals in the groundwater, surface water, and in the soils/sediments in Bangladesh. The recent disastrous arsenic poisoning of groundwater in Bangladesh was the main field of study; February 1999 – May 2000.

- **Geological Survey of Finland (GSF), Department of Quaternary and Environmental Geology** – Postdoctoral Research Fellow - Examined release of arsenic and other toxic metals from the sedimentary bedrock and soil, leakage to surface and groundwater, and its effects on human health; February 1997 – December – 1998.

- **University of Oulu, Finland; Institute of Geosciences** (International Weathering Project) Post Graduate (Ph.D) Research Fellow - The research included the release of major and trace elements from sedimentary and metamorphic bedrocks, its fate, and the formation of secondary clay minerals during chemical weathering. The study compared the weathering phenomena between two climatically different regions – Finnish Lapland and Bangladesh; September 1989 – January, 1997.

Reviewer: Reviewer for *South Eastern Geology* (Hydrogeochemistry)

Fluent in : English, Bengali, Finnish and Arabic (Arabic-reading and writing only).

List of publications:

Boggs, Mark; **Islam, Mohammed**; Dong, Wenming; Wall, Nathalie A., 2013. Complexation of Tc(IV) with EDTA at varying ionic strength of NaCl. *Radiochimica Acta* 101: 13 – 18.

Boggs, Mark; Minton, Travis; Lomasney, Samuel; **Islam, Mohammed**; Dong, Wenming; Gu, Baohua; Wall, Nathalie, 2011. Interactions of Tc(IV) with humic substances. *Environmental Science & Technology* 45(7): 2718 - 2724

- Islam, M.R.** and Schulze-Makuch, D., 2007. Adaptation Mechanisms of Multicellular Extremophiles. *International Journal of Astrobiology* 6(3): 199 – 215.
- Islam, M.R.**, 2005. Rain and rocks: the recipe for river water chemistry. In: J. Lehr (ed.) *The Encyclopedia of Water*. ME-276. John Wiley & Sons. p.1 -6.
- Tuller, M. and **Islam, M.R.**, 2005. Methods for monitoring solute transport. In: J. Álvarez-Benedi and R. Muñoz-Carpena (editors): *Soil-Water-Solute Processes in Environmental System. Monitoring, Characterization and Modeling*. CRC Press. p. 309 – 353.
- Xia Zhou, Stephen J. Bent, Maria G. Schneider, Catherine C. Davis, **Mohammed R. Islam** and Larry J. Forney, 2004. Characterization of vaginal microbial communities in adult healthy women using cultivation-independent methods. *Microbiology* 150: 2565-2573.
- Islam, Md. R.**, Peuraniemi, V., Aario, R.T., Rojstaczer, S., 2002. Geochemistry and mineralogy of saprolite in Finnish Lapland. *Applied Geochemistry*, Vol. 17(7): 885-902.
- Islam, Md. R.**, Rojstaczer, S., Peuraniemi, V. and Aario, R.T., 2002. Alteration of primary minerals during intense chemical weathering in Bangladesh. *Journal of Asian Earth Sciences* 20(8): 889-901.
- Islam, Md. R.**, Salminen, R. and Lahermo, P., 2000. Arsenic and other toxic elemental Contamination of groundwater, surface water and soil in Bangladesh and their possible effects on human health, *Environmental Geochemistry and Health*, 22: 33 – 53.
- Islam, Md. R.**, Lahermo, P., Salminen, R., Rojstaczer, S. and Peuraniemi, V., 2000. Lake and reservoir water quality affected by metals leaching from the tropical soils, Bangladesh *Environmental Geology*, 39/10: 1083 – 1089.
- Salminen, R., **Islam, Md. R.**, and Lahermo, P., 1999. The extremely high concentration of arsenic and its speciation in groundwater from Bangladesh. *Geological Survey of Finland, Special paper* 27: 103 - 106.
- Islam, Md. Riajul.**, 1996. The ancient weathering crust in Finnish Lapland and the recent weathering crust in Bangladesh-a comparison. *Acta Univ. Oul. A* 285: 129 p. (Ph. D. disser.).
- Vesa Peuraniemi and **Md. Riajul Islam**, 1993. The weathering crust in the Vuotso-Tankavaara area- the first evidence on the occurrence of halloysite in Finland. *Chemical Geology*, 107: 307-311.

Abstracts presented:

- Rebecca McGee, Julia Piaskowski, **Mohammed Islam**, Clarice Coyne, Sanja Roje, Paul Buckley, James Harsh, Lynne Carpenter-Boggs, 2012. Lentil selection to reduce dietary arsenic. (*Poster presented to Bio-Ag Symposium, Washington State University, Pullman, WA, USA*).
- Husain MT, Morrison E, Bridge TE, Berryhill LJ, **Islam MR**, Zaman M, Alam M, Adel MM, and Slovak T., 2010. Freedom Water Filtration System: A Solution to the Arsenic and

Pathogenic Bacteria Contaminated Water Crisis in Bangladesh & Other Underdeveloped Nations. Proc. *The 4th International Conference on Water Resources and Arid Environments*. Dec. 5- 8, 2010, King Saud University, Riyadh, KSA.

Islam, M., Tarvainen, T., Busboom, J., Backman, B., Nelson, M. and Ullman, J., 2010.

Arsenic in Groundwater and River Water of Bangladesh- A search for Arsenic Free Drinking Water. Proc. *65th Northwest Regional Meeting and 22nd Rocky Mountain Regional Meeting of the American Chemical Society*; June 20 – 23, 2010; Washington State University, Pullman, Washington. P-25.

Mohammed Rajul Islam and Markus Tuller, 2004. Chemical and Mineralogical Composition of Baked Ceramic Aggregates Used as Plant Growth Media in Space. *Abstract: Am. Soc. Agron. (ASA)-Crop Sci. Soc. Am. (CSSA)-Soil Sci. Soc. Am. (SSSA)- International Annual Meetings with the Canad. Soc. Soil Sci.* Seattle, WA, 2004.

Rosella Viola, Markus Tuller, and **Mohammed Rajul Islam**, 2004. Microscopic Observations of Pore Space Geometry in Clay-Sand Mixtures under Varying Hydration States. *Abstract: Am. Soc. Agron. (ASA)-Crop Sci. Soc. Am. (CSSA)-Soil Sci. Soc. Am. (SSSA)- International Annual Meetings with the Canad. Soc. Soil Sci.* Seattle, WA, 2004.

Lucas Möller, Markus Tuller, Kimberley Kuhlman, and **Mohammed Rajul Islam**, 2004. Deposition and Stability of Surrogate Martian Dust on Inclined and Spherical Surfaces. *Abstract: Am. Soc. Agron. (ASA)-Crop Sci. Soc. Am. (CSSA)-Soil Sci. Soc. Am. (SSSA)- International Annual Meetings with the Canad. Soc. Soil Sci.* Seattle, WA, 2004.

L.E. Moller, M. Tuller, **M.R. Islam**, L. Baker, and K. Kuhlman, 2004. Mars environmental chamber for dynamic dust deposition and statics analysis. *Lunar and Planetary Science Conf. XXXV* – March 2004; Houston, Texas. *Abstract -17773*.

Mohammed R. Islam; Stuart A. Rojstaczer, and Muhammad A. Islam, 2000. River water as safe Arsenic-free drinking water in Bangladesh. Abstract: Fourth Int. Conf. on Arsenic Exposure and Health effects. June 18 – 22, 2000; San Diego, California , p. 128.

Mohammed B. Abou-Donia, Elizabeth A. Herrick, **Mohammed R. Islam**, and Mohammed B. Islam, 2000. Cytoskeleton autoantibodies in sera of arsenic patients with neurologi deficits. Abstract: Fourth Int. Conf. on Arsenic Exposure and Health effects. June 18 – 22, 2000; San Diego, California.

Islam, Md. R.; Islam, Muhammed, A., Rojstaczer, S., 2000. River water quality: The source of Arsenic-free drinking water in Bangladesh. **Abstract- 2nd Int'l Symposium on Reducing the Impact of Toxic Chemicals on the Bengal Basin**, March 6-11, 2000, Dhaka and Calcutta.

Aario, R.T., Peuraniemi, V.J. and **Islam, Md. R.**, 1999. The Preglacial weathering crust and its contribution to the properties of the Pleistocene deposits – studies in northern Finland. Abstract: *INQUA meeting*, Durban, South Africa, 3 – 11th Aug., 1999 .

Islam, Md. R. and Rojstaczer, S., 1999. Sever arsenic contamination of groundwater in Bangladesh. *Abstract: Amer. Geophys. Union Spring meeting*, 1999, p. 1415h.

Islam, Md. R., Kahelin, H., Salminen, R., Lahermo, P. and Loukola-Ruskeeniemi, K., 1998. Occurrence and speciation of arsenic in severely contaminated groundwater from Bangladesh. *Proc. 34 th, Annu. Conf. and Sympo*, 1998, Amer. Water Res. Assoc. (AWRA) Point Clear, Alabama, U.S.A., p. 206.

Islam, Md. R., Salminen, R., Kahelin, H. and Lahermo, P., 1998. Arsenic contamination of groundwater in Bangladesh. *Book of Abst., 3rd Int. Conf. on Arsenic Exposure and Health Effects*. July 12-15, 1998 in San Diego, U.S.A., pp. 1 - 5.

Aario, R.T., Peuraniemi, V.J. and **Islam, Md. R.**, 1993. Weathering crusts in Finnish Lapland and Bangladesh-significance for geochemical exploration. *Proc. 16th Int. Explor. Geochem. Symp.*, Beijing, China; 1-6th Sept., 1993.

Islam, Md. R., Peuraniemi, V.J. and Aario, R.T., 1993. Clay mineralogy and the economic significance of the weathering crusts in Finnish Lapland and Bangladesh. *Abstr. 10th Int. Clay Conf.*, Adelaide, Australia; July 18-25, 1993.

News Paper Article:

Islam, M.R. (Co-author), 2008. Water, Arsenic, Ecosystem And Environmental Disasters In Bangladesh. *News from Bangladesh*. Wednesday, April 23, 2008, 19:49:13 PM BDT (Online)

Report:

Sanja Roje, **Mohammed Islam**, Rebecca McGee, Clarice Coyne, Jim Harsh, Julia Piaskowski, and Lynne Carpenter-Boggs, 2012. Lentil Selection and Management to Reduce Dietary Intake of Arsenic. 1-5 pages.