MILON BARMON

Ph. D. Student, Population Biology, Ecology and Evolution (PBEE) Graduate Program
Emory University, Mathematics and Science Center, E523
400 Dowman Drive, Atlanta, GA 30322
Cell: +1-404-933-0160 Email: milon.barmon@emory.edu

EDUCATION

Master's Sep 2019 - Jun 2021
Major: Soil and Water Conservation and Desertification Control
Northwest A&F University
Yangling, Shaanxi, China
Percentage: 87.4/100

Master's Jan 2018 - Mar 2019
Major: Soil Science
National University
Gazipur, Bangladesh
GPA: 3.58/4.00

Bachelor's
Major: Soil Science Aug 2009 - Nov 2015
National University
Gazipur, Bangladesh
GPA: 3.34/4.00

HONORS AND AWARDS

- Awarded ANSO Scholarship (doctoral study) for Young Talents 2021 (Full-funded) in University of Chinese Academy of Sciences, Beijing, China.
- Awarded APFNet Master Scholarship – 2019 (Full-funded) in Northwest A&F University, Yangling, Shaanxi, China.

RESEARCH INTERESTS

- Soil carbon dynamics and greenhouse gas emission in diverse ecosystems
  - Soil carbon storage
  - Greenhouse gas impact on varied climate smart agriculture practices
  - Soil health improvements
  - Connecting soil health with human health to environmental health

- Agricultural resource management (organic fertilizer, chemical fertilizer, etc.)
  - Long-term fertilization impact assessment on soil physical, chemical and biological properties
  - Nutritional aspect of soils (N, P, K, C, etc.)

- Phosphorus availability and deficiency in soil
- Estimating new approach of fertilizer recommendation
- Improvement in soil fertility and health
- Sustainable use of chemicals and other materials in modern agriculture practices

- Alternate agricultural resources (i.e., biochar, biosolids and, bone-char, etc.) management
  - Characterization of biochar
  - Improvement of biochar properties
  - Application of biochar, biosolid and bone-char in crop production
  - Practice of renewable fertilizer resources to sustain the agronomic benefits and environmental stability

RESEARCH EXPERIENCES

South China Botanical Garden, Chinese Academy of Sciences Dec 2021- Jul 2022

Soil heavy metals phytoremediation

- Phytoremediation efficiency of *Acacia* and *Eucalyptus*: the role of soil, temperature and exogenous additives on Cd and Pb uptake.

Institute of Soil and Water Conservation, Northwest A&F University Sep 2019 - Jun 2021

Master's Thesis: Changes of phosphorus fractionations in soil aggregates under long-term fertilization management on the Chinese Loess Plateau.

Long-term fertilization impact assessment

- Sampling from the long-term fertilization experiment field of Loess Plateau, Analyze different soil physio-chemical properties to identify the impact of long-term fertilization in soil.
- Applying the most recognized phosphorus extraction procedure (Hedley method) to analyze different phosphorus fractions to define phosphorus availability, deficiency, and changes in soil under long-term fertilization.
- Finding the significant difference among those phosphorus fractionations based on different fertilization practices, aggregate size classes and soil depths.

Soil erosion induced research

- Assessment runoff and sediment losses and measuring greenhouse gas emissions in the different gradients plot to determine the effect of rainfall in the Rainfall simulation hall, Institute of Soil and Water Conservation, NWAFU.

Effects of different soil-water and fertilizers combinations on morphological, physiological, and biochemical attributes in coal mined spoils

- Identifying the effect on morphological growth responses by measuring plant height, stem diameter, root length, dry biomass, and root/shoot (R/S) ratio of biomass
- Physiological responses by water use efficiency (WUE), the levels of chlorophyll, malondialdehyde (MDA), and proline (Pro)

- Biochemical responses by the determination of antioxidant enzyme activities superoxide dismutase (SOD), catalase (CAT) and peroxidase (POD).

Field Research Experiences

- Soil sampling, preparation and surveying in two AEZ of Bangladesh to distinguish between physical and chemical characteristics of soil, knowledge of soil morphological status and soil series. This fieldwork was supervised by Kazim Khan Abul Ulie, Associate Professor, Department of Soil Science, National University, Gazipur, Bangladesh, in June 2015.

Research Internship

- Successfully completed Internship on Tropical Forest Management for Asia- Pacific Forestry Scholarship Students, organized by APFNet (Asia-Pacific Network for Sustainable Forest Management and Rehabilitation) and ECTF, Guangxi, China (November 18-24, 2019).

RESEARCH SKILLS

- Proficient in the operation of Muffle furnace, Round bottom flask apparatus (fiber determination), Soxhlet's extraction apparatus (fat extractor), Kjeldahl digestion and distillation unit, Bomb calorimeter (energy determination), Gas chromatography, Settling tube (soil aggregate determination), Temperature-controlled centrifuge machine, Spectrophotometer (manual and automatic), Autoclave chamber, Soil moisture meter, etc.
- Proficient in MS Office (Word, Excel and PowerPoint).
- Skilled in different bibliometric analysis tools (Vosviewer, Gephi, Hiscite, and, Biblioshiny of R studio).
- Statistical analysis tool (SPSS 22 and Statistix 8.1)
- Graphing and Analysis software (Origin 2018).

ACADEMIC EXPERIENCES

- Certified on EHSO - Biosafety, EHSO - Research Lab Safety (Initial and Refresher) training, issued by BioRAFT on behalf of Emory University, Atlanta, September 18, 2022.
- Participated "Jones Program of Ethics" organized by Professional Development and Career Planning, Laney Graduate School, Emory University, Atlanta, August 18, 2022.
- Successfully completed "Teaching Assistant Training & Teaching Opportunity (TATTO)-600" convened by Professional Development and Career Planning, Laney Graduate School, Emory University, Atlanta, August 16-17, 2022.
- Participated in the distance training course of "Management of Agricultural Economy and Regulation of Agricultural Production Environment" organized by SCO Agricultural Technology Exchange and Training Demonstration Base, Yangling, Shaanxi, China, June - December, 2020.
- Participated in and completed an online course entitled "Introduction to Urban Forestry in the Asia Pacific Region" organized by the University of British Columbia, Canada, from September 24th to December 31st, 2020.

- Successfully completed the course held in Yangling, China from May 6th to June 6th, 2020, entitled "Research methods applied to wood biomass production for energy," a joint initiative of Northwest A&F University, University of Eastern Finland and EduSilva.
- Completed two online courses entitled "Restoration of Degraded Forest Ecosystems & Forest Plantation Development" and "Sustainable Forest Management in a Changing World" organized by the University of British Columbia, Canada, February 22nd to April 20th, 2020.
- Certified in Chinese Language Proficiency Test (HSK- III), Shaanxi, China, January 2020.
- Successfully completed Special Training Course on Office Management, RPATC, Bangladesh Public Administration Training Centre (BPATC), Dhaka (2016).
- Participated in a five-day training workshop on Laboratory Equipment Operation and Maintenance organized and supported by Bangladesh Livestock Research Institute (BLRI), Savar, Dhaka (September 10-14th, 2013)

WORKING EXPERIENCES

- Ph. D. Student, Population Biology, Ecology and Evolution (PBEE) Graduate Program, Emory University, Atlanta, GA 30322, August 2022 to present.
- Served as a Research Assistant in the Environmental Ecology laboratory at South China Botanical Garden, Chinese Academy of Sciences, Guangzhou, China, from August 2021 to July 2022.
- Worked as a Bench Assistant in Capital Development Authority (CDA) under the Ministry of Housing and Public Works, Government of the People's Republic of Bangladesh, from October 2015 to September 2019.
- Worked as a Scientific Assistant in a nutrition laboratory under Fodder research and Development project, Bangladesh Livestock Research Institute (BLRI), Savar, Dhaka, from July 2013 to October 2015.

PUBLICATIONS

Research Articles

- Sarker T, Sarkar A, Rabbany MG, **Barmon M**, Roy R, Rahman MA, Hossain KZ, Hoque F and Asaduzzaman M. (2021). Evaluation of Preventive, Supportive and Awareness Building Measures among International Students in China in Response to COVID-19: A Structural Equation Modeling Approach. *Global Health Research and Policy.* DOI: https://doi.org/10.1186/s41256-021-00192-5
- Roy R, Sultana S, Begum N, Forana D, **Barmon M**, Zhang R, Sarker T, Rabbany MG. (2021). Exogenous melatonin reduces water deficit-induced oxidative stress and improves growth performance of *Althaea rosea* grown on coal mine spoils. *Environmental Science and Pollution Research.* DOI: https://doi.org/10.1007/s11356-021-14671-2
- Roy R, Delgado AN, Sultana S, Wang J, Battaglia ML, Sarker T, Seleiman MF, **Barmon M**, Zhang R. (2021). Additions of optimum water, spent mushroom compost and wood biochar to improve the growth performance of *Althaea rosea* in drought-prone coal-mined spoils. *Journal of Environmental Management.* DOI: https://doi.org/10.1016/j.jenvman.2021.113076

- Roy R, Mahboob MG, Arena C, Kader MA, Sultana S, Hasan AK, Wang J, Sarker T, Zhang R and **Barmon M** (2021). The modulation of water, nitrogen and phosphorous supply for growth optimization of the evergreen shrubs *Ammopiptanthus mongolicus* for revegetation purpose. *Frontiers in Plant Science.* DOI: https://doi.org/10.3389/fpls.2021.766523
- Proshad R, Uddin M, Khan MSU, Ragib AA, **Barmon M**, Dey H, Islam M, Idris AM, Haque AK. A critical review on metal pollution in Bangladesh soils with associated risk estimation and metal remediation strategies. *Environmental Science and Pollution Research* (*under review*)
- Anchi Wu, Xin Xiong, Guoyi Zhou, **Barmon M**, Wenjing Chen, Xuli Tang, Juxiu Liu, Qianmei Zhang, Andi Li, Shizhong Liu, Guowei Chu and Deqiang Zhang. Climate change -related biodiversity fluctuations and composition changes in an old-growth subtropical forest: 26-yr study. *Journal of Environmental Management* (*under review*)

Book Chapter:

Barmon M., Shohag M.J.I., Roy R., Wei Y., He Z., Yang X. (2022) Risk Assessment of Microplastic Pollution. In: Hashmi M.Z. (eds) Microplastic Pollution. Emerging Contaminants and Associated Treatment Technologies. Springer, Cham. https://doi.org/10.1007/978-3-030-89220-3_17

PRESENTATIONS

- Presentation entitled "Tropical Forest Management," Experimental Centre for Tropical Forest Management, Guangxi, China, November 2019.
- Presentation on "Year-round achievement and next year goal," Institution of Soil and Water Conservation, Northwest A&F University, January 2020.
- Presentation entitled "Soil Sampling, Preparation and Conservation," National University, Gazipur, Dhaka, Bangladesh, 2015.

CONFERENCE PARTICIPATION

- Attended Soil Ecology Society Biennial Meeting 2022 (Virtually), Pacific Northwest National Laboratory, Richland, WA, USA, May 17-19, 2022.

PROFESSIONAL AFFILIATIONS

- Graduate Student Member, Soil Science Society of America (SSSA), Crop Science Society of America (CSSA), and American Society of Agronomy (ASA)
- Student Member, World Association of Soil and Water Conservation
- APFNet Alumni Community

VOLUNTEERING ACTIVITIES

- Attended community teaching engagement program as Dr. Sihi's Biogeochemistry laboratory team at Fernbank Forest, Atlanta, August 20, 2022.
- Nominated as an excellent volunteer in the activity of International Children's Day, organized by the College of International Education, Northwest A&F University, China, June 2021.
- Served as a member of Concern and support group of international students at Northwest A&F University for COVID-19 pandemic.
- Country leader, 18th International Cultural Festival 2019, arranged by Northwest A&F University, Yangling, China.