

Muhammad Dawood (PhD)

Associate Professor

Deptt. Environmental Sciences

Bahauddin Zakariya University 60800 Multan, Pakistan

Contact: +92-333-5475212

Email: dawood_mian25@hotmail.com,

drdawood@bzu.edu.pk



PERSONAL PROFILE

NAME : **Muhammad Dawood (大宇)**
POSTAL ADDRESS : Department of Environmental Sciences,
Bahauddin Zakaria University, Multan
NATIONALITY : Pakistani
MARITAL STATUS : Married
RELIGION : Islam
NIC : xxxxx-xxxxxxx-x
PASSPORT : xxxxxxxxx
DATE OF BIRTH : 15-05-1977
MOBILE : **+92-333-5475212**
EMAIL ADDRESS : **drdawood@bzu.edu.pk**

PROFESSIONAL EXPERIENCE

- **June 2019-May 2020:** Worked as **Postdoctoral Fellow** at Institute of Subtropical Agriculture, Chinese Academy of Sciences, P.R. China
- **January 2021-Present:** Working as **Associate Professor** at Deptt. Environmental Sciences, Bahauddin Zakariya University Multan, Pakistan
- **November 2012-January 2021:** Worked as Assistant Professor at Department of Environmental Sciences, Bahauddin Zakariya University Multan Pakistan
- **April 2009-Sept. 2009:** Worked as Scientific Officer at Pakistan Agricultural Research Council, Islamabad Pakistan

ACADEMIC QUALIFICATIONS

Degree/Certificate	Board/University	Passing Year	CGPA/Marks	Percentage	Division/Grade
PhD (Crop Science)	Zhejiang University, Hangzhou, PR China	2012	702/800	88	A
MS Crop Science	Zhejiang University, Hangzhou, PR China	2008	1044/1300	81	A
B Sc (Hons) Agriculture	BZ University Multan, Pakistan	1999	3.44/4.00	73	1 st

FIELD OF WORK/INTEREST

Currently, my team is involved in diversified environmental related projects. We have been dealing with new options suitable for environmental and climate change related adaptations of agronomic plants and remediation of polluted environments. We are successfully running our ecotoxicology lab for last ten years, wherein postgraduate students are mainly engaged in finding sustainable approaches to be employed practically in the field conditions. Main areas of my research team's interest are:

- Climate Change Resilient Crop Production
- Renewable Energy Systems
- Stress Physiology, Abiotic Stresses
- Heavy Metal Toxicity in Plants, Phytoremediation
- Ecotoxicological behavior of plants
- Organic Pollutants degradation
- Wastewater Treatment
- Phytoremediation/Phytoextraction
- Plant Physiology, Plant Biotechnology, Abiotic Stress, Proteomics,
- Biofortification of micronutrients in cereal crops
- Wetland Ecology
- Role of Transcription Factors and MicroRNAs for Abiotic stress response

POSTGRADUATE RESEARCH & STUDY

- **PhD Thesis Title:** Physiological mechanism of hydrogen sulfide-mediated alleviation of aluminum, cadmium and salinity stresses and effects of sulfur nutrition on growth and grain quality of barley
- **MS Thesis Title:** Mechanism of Chromium Toxicity Tolerance in *Typha angustifolia* and its Possible Role in Phytoremediation of Heavy Metal Polluted Soil
- During MS and doctoral programs, I had studied various modern and advance level courses like Bioinformatics, Genome Data Analysis, Proteomics and Plant Eco-physiology
- Evaluated the proteome profile changes in mature barley grains by 2-DE and Maldi-Toff
- Determined changes in Amino acid profile by S nutrition, Morphological alterations in plant tissues by transmission electron microscopy (TEM), scanned electron microscopy (SEM) and confocal microscopy
- Studied the toxic effect of cadmium on physiology of transgenic as well as wild type cotton and its localization at cellular level
- Evaluation of *Typha angustifolia* for chromium toxicity tolerance and its possible role in phytoremediation
- Potential use of *Typha angustifolia* in Chelate-assisted phytoextraction of Cadmium (Cd), Chromium (Cr), Copper (Cu) and Lead (Pb) polluted soil
- Oxidative stress detection caused by abiotic stress and antioxidant defense mechanism activation in plants

CURRENT PROJECTS

- Identification and Evaluation of Selected macrophytes from wetlands of Punjab Province for Organic and Inorganic Pollutants Removal
- Increasing Phosphorus Use Efficiency of Environmentally Degraded Soils by Plant based Amendments
- Increasing Adaptability of Crop Plants to Multitude of Abiotic Stresses
- Climate resilient new crops suited to tropical and subtropical conditions

TEACHING

Had been teaching various undergraduate and graduate level courses since my joining of Department of Environmental Sciences, BZ University Multan, Pakistan.

- Environmental Toxicology
- Environmental Monitoring
- Environmental Biotechnology
- Environmental Pollution
- Environmental Chemistry
- Natural Resource Management
- Introduction to Environmental Sciences
- Climatology
- Climate Change
- Climate Change, Adaptation and Mitigation
- Research Methods in Environmental Science
- Analytical Techniques in Environmental Science

RESEARCH SUPERVISION

- **MS/M.Phil.** Completed: 34
Ongoing: 11
- **Ph.D.** Completed: 01

International Academic Activities

- Participated in one month International training on Hybrid Rice hosted by Longping Hightech International, Changsha, P.R.China (July 2018)
- Worked as Associate Researcher at Institute of Subtropical Agriculture, Changsha, Chinese Academy of Sciences, P.R.China (July 2019-June 2020)

RESEARCH PAPERS (INTERNATIONAL)

1. Wei, Z., Deng, Z., **Dawood, M.**, Yu, Y., Wang, Z., & Huang, K. (2025). Reassessing China's virtual water trade with a global value chain framework: Participation, inequality and multi-scenario analysis. **Resources, Conservation and Recycling**, 212, 107904.
2. Tan, T., Wu, L., Deng, Z., **Dawood, M.**, Yu, Y., Wang, Z., & Huang, K. (2024). The urban-rural dietary water footprint and its inequality in China's urban agglomerations. **Science of the Total Environment**, 176045.
3. Yang, Z., Wang, M., Fan, S., Zhang, Z., Zhang, D., He, J., ... & Shang, H. (2024). GhPME36 aggravates susceptibility to *Liriomyza sativae* by affecting cell wall biosynthesis in cotton leaves. **BMC biology**, 22(1), 197.
4. Xu, X., Wen, T., Ren, A., Li, D., **Dawood, M.**, Wu, J., & Zhao, G. (2024). *Gossypium arboreum* PPD2 facilitates root architecture development to increase plant resilience to salt stress. **Physiologia Plantarum**, 176(4), e14473.
5. Dawood, M., Khan, S., & Hasan, M. (2024). Weather and climate fluctuation of Peshawar city Khyber Pakhtunkhwa, Pakistan (1931-2020). **Science International**. 36. 275-278.
6. Wang B, Shi X, Shi M, Qi M, Zhang Z, Yang N, **Dawood M**, Shahzad AN, Ge Y. Phyllospheric Microorganisms and Bean Characteristics Influence Quality of Ten Genotypes of *Coffea Arabica*. **Journal of Soil Science and Plant Nutrition**. 2024 Apr.
7. Ali MH, Muzaffar A, Khan MI, Farooq Q, Tanvir MA, **Dawood M**, Hussain MI. Microbes-assisted phytoremediation of lead and petroleum hydrocarbons contaminated water by water hyacinth. **International Journal of Phytoremediation**. 2024 Feb 23;26(3):405-15.
8. Kong, X., Yang, W., Zuo, Y., **Dawood, M.**, & He, Z. (2023). Characteristics of physicochemical properties, structure and in vitro digestibility of seed starches from five loquat cultivars. **International Journal of Biological Macromolecules**, 126675.
9. Zahoor, A., Xu, T., Wang, M., **Dawood, M.**, Afrane, S., Li, Y., ... & Mao, G. (2023). Natural and artificial green infrastructure (GI) for sustainable resilient cities: a scientometric analysis. **Environmental Impact Assessment Review**, 101, 107139.
10. Farooq Q, Khan MI, Ali MH, Bashir S, Azam M, Qadri R, Ali B, **Dawood M**, Hussain MI. A bacterial consortium and L-tryptophan boosted glyphosate removal, mungbean growth and physiology in contaminated soil. **Arabian Journal of Geosciences**. 2023 Dec;16(12):653.
11. Bukhari, S. A. Q., Nawaz, A., & **Dawood, M.** (2023). Evaluation of phytoremediation potential and resistance of *Gladiolus grandiflora* L. against cadmium stress. **Environmental Geochemistry and Health**. <https://doi.org/10.1007/s10653-023-01579-8>
12. Gondal, A. H., Khan, M. I., Cheema, S. A., Hussain, M. I., Ali, B., Nawaz, M., ... & Murtaza, G. (2023). The co-application of bioslurry and compost with inorganic zinc fertilizer improved soil quality, zinc uptake, and growth of maize crop. **Arabian Journal of Geosciences**, 16(6), 393.
13. **Dad K, Nawaz M, Dawood M, Hassan R, Nawaz H, Javed K, Zou G and Zhao F.** 2022. A review on biochar, its physicochemical properties and capacity to reduce the toxicity of heavy metals in soil. **Bioscience Research**, 2022 19(1): 118-130.

14. Batool, S. I., **Dawood, M.**, Nawaz, M., Malik, Z., 2021. Nanoscale Zerovalent Iron Based Moderation of Chromium Stress in Tomato Seedlings is Related with Induced Antioxidants and Suppressed Cr Uptake. *International Journal of Innovative Approaches in Agricultural Research*. (Accepted)
15. Yang, W., Liu, D., Wang, Y., Hussain, B., Zhao, F., Ding, Z., Yang, X., Zhu, Z., **Dawood, M.**, 2021. Variations in phytoremediation potential and phytoavailability of heavy metals in different Salix genotypes subjected to seasonal flooding. *Journal of Environmental Management*. 299: 113632.
16. Ayyaz, A., Farooq, M. A., **Dawood, M.**, Majid, A., Javed, M., Athar, H. U. R., ... & Zafar, Z. U. (2021). Exogenous melatonin regulates chromium stress-induced feedback inhibition of photosynthesis and antioxidative protection in *Brassica napus* cultivars. *Plant Cell Reports*, 40(11), 2063-2080.
17. Malik, Z., Afzal, S., **Dawood, M.**, Abbasi, G.H., Khan, M.I., Kamran, M., Zhran, M., Hayat, M.T., Aslam, M.N. and Rafay, M., 2021. Exogenous melatonin mitigates chromium toxicity in maize seedlings by modulating antioxidant system and suppresses chromium uptake and oxidative stress. *Environmental Geochemistry and Health*, pp.1-19.
18. Nawaz, M., **Dawood, M.**, Javaid, K., Imran, M., Zhao, F., Saima, S. and Shah, S.T.H., 2021. Evaluating the environmental impacts of fluoride on the growth and physiology of cotton (*Gossypium hirsutum*). *Pakistan Journal of Agricultural Research*, 34(3), pp.425-430.
19. Shabir, A., Saqib, M., Ahmad, M., Latif, M., Bukharia, S.A.H., Ahmad, M.Q., **Dawood, M.** and Rashid, M., 2020. Enhancing Drought Tolerance of Wheat (*Triticum aestivum* L.) Through Foliar Application of Proline and L-Tryptophan. *Biological Sciences-PJSIR*, 63(3), pp.199-206.
20. **Dawood, M.**, Shah, S.T.H., Imran, M., Anwar, M.F., Nawaz, M. and Yaseen, R., 2020. Quality of Underground Water of Tehsil Khanewal-An Overview. *International Journal of Economic and Environmental Geology*, 11(3), pp.9-12.
21. Ahmad, R., Ali, S., Rizwan, M., **Dawood, M.**, Farid, M., Hussain, A., Wijaya, L., Alyemeni, M.N. and Ahmad, P., 2020. Hydrogen sulfide alleviates chromium stress on cauliflower by restricting its uptake and enhancing antioxidative system. *Physiologia plantarum*, 168(2), pp.289-300.
22. KHAN, M.I., MALIK, Z., ABBASI, G.H., CHEEMA, S.A., **DAWOOD, M.**, JAVED, M.B., RAFAY, M. and MANSHA, M.N., 2020. Alleviation of Toxic Effects of Untreated Wastewater on Selective Vegetables Using Soil Organic Amendments. *Journal of Agricultural Sciences*, 26(1), pp.54-63.
23. Fu, Man-Man, M. Dawood, Nian-Hong Wang, and Feibo Wu. "Exogenous hydrogen sulfide reduces cadmium uptake and alleviates cadmium toxicity in barley." *Plant Growth Regulation* 89, no. 2 (2019): 227-237.
24. Kanwal, U., Ibrahim, M., Ali, S., Adrees, M., Mahmood, A., Rizwan, M., Abbas, F., Dawood, M. and Muhammad, T.A.D., 2019. Potential of *Alternanthera bettzickiana* (Regel) G. Nicholson for remediation of cadmium-contaminated soil using citric acid. *Pakistan Journal of Agricultural Sciences*, 56(3).
25. Dawood M (2018) Effect of heavy metals on soil microbial activities during two seasons. *International Journal of Biosciences (IJB)* 12. doi:10.12692/ijb/12.2.91-98
26. Nawaz, A., Sheteiwy, M. S., Khan, S. M., Bukhari, S. A. H., **Dawood, M.**, Guan, Y., Hu, J., 2017. Exploring the Mechanism of Exogenous Applied Methyl Jasmonate for Germination Inhibition in Hybrid Rice. *Pakistan Journal of Life and Social Sciences*. 15(1):60-71.

27. Bibi, N., Imrul, M. A., Kai, F., **Dawood, M.**, Feng Li, Shuna Yuan, and Xuede Wang. **2017**. Role of Brassinosteroids in Alleviating Toxin-Induced Stress of *Verticillium Dahliae* on Cotton Callus Growth. *Environmental Science and Pollution Research*. 24, no. 13 (May 01 2017): 12281-92. <http://dx.doi.org/10.1007/s11356-017-8738-6>.
 28. Daud, M. K., Mei, L., Azizullah, A., **Dawood, M.**, Ali, I., Mahmood, Q., Ullah, W., Jamil, M., Zhu, S. J., **2016**. Leaf-based physiological, metabolic, and ultrastructural changes in ultivated cotton cultivars under cadmium stress mediated by glutathione. *Environmental Science and Pollution Research*. (online) (DOI 10.1007/s11356-016-6739-5).
 29. Qureshi, I. Z., Kashif, Z., Hashmi, M, Z., Su, X., Malik, R. N., Ullah, K., Hu, J., **Dawood, M.**, **2015**. Assessment of heavy metals and metalloids in tissues of two frog species: *Rana tigrina* and *Euphlyctis cyanophlyctis* from industrial city Sialkot, Pakistan. *Environmental Science and Pollution Research*. 22(18):14157-14168.
 30. Farid, M., Ali, S., Ishaque, W., Shakoor, M. B., Niazi, N. K., Bibi, I., **Dawood, M.**, Gill, R. A., Abbas, F., **2015**. Exogenous application of ethylenediaminetetraacetic acid enhanced phytoremediation of cadmium by *Brassica napus* L. *International Journal of Environmental Science and Technology*. 12:3981–3992.
 31. Bibi, N., Kai, F., • **Dawood, M.**, Nawaz, G., Yuan, S., Wang, X., **2014**. Exogenous application of epibrassinolide attenuated *Verticillium* wilt in upland cotton by modulating the carbohydrates metabolism, plasma membrane ATPases and intracellular osmolytes. *Plant Growth and Regulation*. 73:155–164
 32. Dai, H., Ibrahim, W., Zheng, W.T., **Dawood, M.**, He, X.Y., Zhao, Z., Zhang, G.P., Li, C.D., Wu, F.B., **2013**. Characteristics of Photosynthetic Performance, Antioxidant Capacity and Nutrient Concentration of Tibetan Wild Barley in Response to Aluminium Stress. *Asian Journal of Chemistry*. 25(14), 7727-7731
 33. Cao, F., Wang, N., Zhang, M., Dai, H., **Dawood, M.**, Zhang, G., Wu, F., **2013**. Comparative study of alleviating effects of GSH, Se and Zn under combined contamination of cadmium and chromium in rice (*Oryza sativa*). *Biometals*. 26(2), 297-308
 34. **Muhammad Dawood**, Cao,F.B., Jahangir, M.M., Zhang,G.P., Wu, F.B., **2012**. Alleviation of aluminum toxicity by hydrogen sulfide is related to elevated ATPase, and suppressed aluminum uptake and oxidative stress in barley. *Journal of Hazardous Materials*. 209-210, 121-128
 35. Daud, M.K., Variath, M.T., Ali, S., Najeeb, U., Jamil, M. Hayat, Y., **Dawood, M.**, Khan, M.I., Zaffar, M., Cheema, S.A., Tong, X.H., Zhu, S.J., **2009**. Cadmium-induced ultramorphological and physiological changes in leaves of two transgenic cotton cultivars and their wild relative. *Journal of Hazardous Materials*.168, 614-625.
 36. **Dawood M.**, Dong, J., Chen, F., Zhang, G.P., Wu, F.B., **2009**. Comparison of EDTA and citric acid- enhanced phytoextraction of heavy metals in artificially metal contaminated soil by *Typha angustifolia*. *International Journal of Phytoremediation*. 11, 558-574.
 37. Daud, M.K., Sun, Y., **Dawood, M.**, Hayat, Y., Variath, M.T., Wu, Y.X., Raziuddin., Mishkat, U., Salahuddin., Najeeb, U., Zhu, S.J., **2009**. Cadmium-induced functional and ultrastructural alterations in roots of two transgenic cotton cultivars. *Journal of Hazardous Materials*. 161, 463-73.
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BOOK CHAPTERS

1. Iqbal, N., Hayat, M. T., **Dawood, M.**, Nisa, W. U., Akhtar, S., Bangash, N., ... & Asghar, M. A. (2023). Bioremediation and Phytoremediation Aspects of Crop Improvement. In *Climate-Resilient Agriculture, Vol 2: Agro-Biotechnological Advancement for Crop Production* (pp. 903-929). Cham: Springer International Publishing.
2. Sabir, F., Noreen, S., Malik, Z., Kamran, M., Riaz, **M.**, **Dawood, M.**, Parveen, A., Afzal, S., Ahmad, I., & Ali, M. (2022). Chapter 8 - Silicon improves salinity tolerance in crop plants: Insights into photosynthesis, defense system, and production of phytohormones. In H. Etesami, A. H. Al Saeedi, H. El-Ramady, M. Fujita, M. Pessaraki, & M. Anwar Hossain (Eds.), *Silicon and Nano-silicon in Environmental Stress Management and Crop Quality Improvement* (pp. 91-103). Academic Press. <https://doi.org/https://doi.org/10.1016/B978-0-323-91225-9.00022-4>
3. Malik, Z., Afzal, S., Danish, M., Abbasi, G.H., Bukhari, S.A.H., Khan, M.I., **Dawood, M.**, Kamran, M., Soliman, M.H., Rizwan, M. and Alhathloulf, H.A.S., 2020. Role of nitric oxide and calcium signaling in abiotic stress tolerance in plants. *Protective Chemical Agents in the Amelioration of Plant Abiotic Stress: Biochemical and Molecular Perspectives*, pp.563-581.
4. Peerzada, A.M., Bukhari, S.A.H., **Dawood, M.**, Nawaz, A., Ahmad, S. and Adkins, S., 2019. Weed Management for Healthy Crop Production. In *Agronomic Crops* (pp. 225-256). Springer, Singapore.
5. Bukhari, S.A.H., Peerzada, A.M., Javed, M.H., **Dawood, M.**, Hussain, N. and Ahmad, S., 2019. Growth and development dynamics in agronomic crops under environmental stress. In *Agronomic crops* (pp. 83-114). Springer, Singapore.
6. Dawood M., Wahid A., Hashmi M.Z., Mukhtar S., Malik Z. (2017) **Use of Earthworms in Biomonitoring of Soil Xenobiotics**. In: Hashmi M., Kumar V., Varma A. (eds) *Xenobiotics in the Soil Environment*. Soil Biology, vol 49. Springer, Cham https://link.springer.com/chapter/10.1007/978-3-319-47744-2_6/fulltext.html
7. Malik Z., Ahmad M., Abassi G.H., **Dawood M.**, Hussain A., Jamil M. (2017) **Agrochemicals and Soil Microbes: Interaction for Soil Health**. In: Hashmi M., Kumar V., Varma A. (eds) *Xenobiotics in the Soil Environment*. Soil Biology, vol 49. Springer, Cham -2) https://link.springer.com/chapter/10.1007/978-3-319-47744-2_11

LANGUAGES

- A good command in writing as well as spoken **English** having 6.5 overall band in IELTS
- Fluent in **Chinese** language; have passed HSK (Chinese Language Proficiency Test) conducted by Chinese Language & Cultural University Beijing, China

PROFESSIONAL EXPERIENCE

- **May, 2003-June, 2004:** Worked as “Farm Manager” at Indus Sugar Mills, Kot Bahadur, Rajan pur
- **July 2004-Aug, 2005:** Worked as “Technical Sales Manager” in private agro-based companies

- ***April 2009-Sep 2009:*** Worked as “Scientific Officer” at Pakistan Agriculture Research Council (PARC)
- ***November, 2012***-January 2021: Worked as Assistant Professor at Department of Environmental Sciences, Bahauddin Zakariya University Multan, Pakistan
- Working as Departmental Student Advisor at department of Environmental Sciences. (Sept. 2013-Present)
- Assistant Superintendent, Abu Bakar Boys Hall, BZU Multan (November 2013-Nov. 2017)
- Member Board of Faculty of Science, BZU Multan
- Member Board of Studies, Department of Environmental Science and Engineering, GCU Faisalabad (2015-18)
- Member Board of Studies, Department of Environmental Sciences, NFC Multan (2023-till date)

List of Thesis Supervision

A. Department of Horticultural Sciences (PhD. Horticulture) (Completed)

S.No.	Name	Session	Thesis title
1	Syed Ali Qasim bukhari	2018-23	Performance evaluation of gladiolus and tuberose under irrigation induced heavy metals stress

B. Department of Environmental Sciences (MS/M.Phil. Environmental Sciences) (Completed)

S.No.	Name	Session	Thesis title
1	Sidra Mukhtar	2015-17	Assessing the role of Biochar and Phosphate Solubilizing Bacteria (PSBs) on wheat seedlings grown under cadmium stress
2	Hina Manzoor	2015-17	Enhancement in mechanical and heat resistant characteristics of fly-ash based geopolymers as a sustainable alternative to portland cement
3	Tarveeha Bukhari	2015-17	Impact of exogenously applied <i>Glutathione</i> (GSH) on physiological and biochemical attributes of tomato plant grown under hydroponically grown Chromium stressful conditions
4	Sobia Razzaq	2015-17	Assessment of combined toxicity of inorganic (Pb) and organic (organophosphorus insecticide) toxicants on growth of spinach (<i>Spinacia oleracea</i>)
5	Ruqia Yasmeen	2015-17	Physiological studies on the impact of biochar on reduction and bioavailability of Chromium in soil and growth of tomato seedlings
6	Rooh-e-Islam	2015-17	Evaluating the ameliorative role of exogenous Si application in tomato seedlings grown under cadmium toxicity conditions
7	Sidra Khalid	2016-18	Interactive Effects of Arsenic and Fluoride Toxicity on Tomato Plants
8	Rabia Nawaz	2016-18	Monitoring of Spatio-Temporal Trends of Toluene over Pakistan
9	Asif Mujatba	2016-18	Silicon Nanoparticles (SiNp) mediated Alleviation of Arsenic toxicity in Tomato
10	Kinza Abid	2018-20	Ecological Footprint Analysis of Gated and Non-gated Communities of Multan
11	Shumaila Mustafa	2018-20	Crustal Dynamics Analysis of Sulaiman Range and its Surroundings using InSAR-SBAS Technique
12	Sara Salman	2018-20	Study of Surface Deformations and Hydrological Variation in Quetta Valley, Pakistan
13	Swaiba Azhar	2018-20	Comparative Study of Carbon Footprint Analysis of Urban and Rural Population of South Punjab
14	Sidra Qadir	2019-21	Synthesis of Nanoscale Zerovalent Iron (nZVI) Supported on Biochar for Chromium Remediation from Aqueous Solution and Soil
15	Syeda Iqra Batool	2019-21	Effects of Zerovalent Iron Nanoparticles (nZVI) on Photosynthesis and Biochemical Adaptation of Soil-Grown tomato
16	Fatima Imtiaz	2019-21	Remediation of Organic Pollutants from Industry Polluted Soil by Co-application of Nano-Zerovalent Iron (nZVI) and Biochar
17	Muhammad Awais	2019-21	Efficiency and Mechanisms of Cr(VI) Removal from Aqueous Solution by Biochar Derived from Water Hyacinth (<i>Eichornia crassipes</i>)
18	Farwa Ali	2020-22	Evaluating the protective role of exogenously applied melatonin against cadmium-induced phytotoxicity in bitter gourd
19	Muhammad Imran Mahar	2020-22	Evaluation of the ameliorative role of biochar on chromium toxicity in bottle gourd

S.No.	Name	Session	Thesis title
20	Momna Akram	2020-22	Health risk assessment of polycyclic aromatic hydrocarbons contamination of groundwater in the vicinity of transportation hub of Multan city
21	Rafsha Naveed	2020-22	Toxicity and health risk assessment of radon in groundwater of Multan city
22	Aneeqa Ikram	2020-22	Industrial metal pollution in groundwater and probabilistic assessment of human health risk in South Punjab
23	Hamna Ihsan	2020-22	Monitoring of groundwater quality and associated health risks in suburban areas of Multan city
24	Zainab Raheem	2020-22	Drinking water quality assessment and related health risks in district Khanewal
25	Samavia Niazi	2021-23	Comparative Dermal Health Risk Assessment of Heavy Metal Contamination in Branded and Locally Produced Whitening Creams in the Multan Region
26	Haroon Rasheed	2021-23	Community Perception about Riverine Biodiversity of the Indus River
27	UbaidUllah	2021-23	Evaluation of the Ameliorative Role of Exogenously Applied Hydrogen Sulfide on Cadmium Toxicity in Tomato Seedlings
28	Zoya Amir	2021-23	Toxicity and Health Risk Assessment of Arsenic and Cadmium in Groundwater of Peri-Urban areas of Multan city
29	Sadia Khaliq	2021-23	Evaluation of Heavy Metals in Selected Cosmetic Products and Health Risk Assessment in Multan
30	Zunaira Riffat	2021-23	Health Risk Assessment of Vegetables Irrigated with Urban Water in Peri-Urban Areas of Multan
31	Noshaba Shafiq	2021-23	Health Risk Assessment of Polycyclic Aromatic Hydrocarbons (PAHs) in the Vicinity of an Oil Refinery

**C. Department of Environmental Sciences (MS/M.Phil. Environmental Sciences)
(Submitted)**

S.No.	Name	Session	Thesis title
1	Taiba Ashraf	2022-24	Health Risk Assessment of summer vegetables grown with industrial wastewater
2	Fatima Ali	2022-24	Temperature Variability and Trend Detection in Multan/Bahawalpur Region
3	Sadia Narmeen	2022-24	Rainfall variability and trend Prediction: a case study of Bahawalpur Division
4	Ayesha Qadeer	2022-24	Blue Water Scarcity and Water Footprint Reduction Strategies in Punjab's Cotton Sector
5	Maria Anwar	2022-24	Biochar-Mediated Phytoremediation of Cr(VI) by Vinca Rosea: An Evaluation of Resistance, Accumulation, and Removal Efficiency
6	Sidra Ramzan	2022-24	Drought assessment using SPI in Bahawalpur Division, Pakistan
7	M. Waseem Akram	2022-24	Natural Habitat and Climate Change Effect on Avian Diversity of Lahore Zoo
8	Ramla Nawaz	2022-24	Exploration of Biochar-Enhanced Resistance and Phytoremediation Potential of Kochia plant in Cd polluted soil
9	Natasha Dildar	2022-24	Evaluation of Cd resistance and biochar-assisted phytoremediation potential of Cosmos plant
10	Muzna Ishfaq	2022-24	Assessing Water Footprint and Blue Water Scarcity for Wheat Crop in Punjab, Pakistan
11	Kainat Zahra	2022-24	Exploring the Role of biochar in Cr (VI) Resistance and Phytoremediation Potential of Vinca rosea.

**D. Department of Geography (MS/M.Phil. Geography)
(Completed)**

S.No.	Name	Session	Thesis title
1	G. Mustafa Sajid	2014-16	Health-related and Epidemiological Impacts of Monsoonal Floods in Southern Punjab
2	Sharafat Ali	2014-16	Solid Waste Management in District Khanewal
3	Muhammad Kashif	2014-16	Impact of Climate Change on Cotton Production in Southern Punjab