DR. AISHA NAZIR (Updated May, 2024)

Assistant Professor (TTS-19; HEC Approved Research Supervisor)

CAREER OBJECTIVE

Contributing to the creation of demand-driven knowledge and innovations in Pakistan as an Academician and Researcher respectively

HIGHEST QUALIFICTION

PhD.

Thesis Title: *ROLE OF AUTOCHTHONOUS FUNGI IN. PHYTOEXTRACTION OF HEAVY METALS. FROM TOXIC TANNERY SOLID WASTE*

Specialization: Applied Phytotechnologies for Environmental Ssanitation

CURRENT STATUS

Serving as Assistant Professor (TTS-19) at Institute of Botany, University of the Punjab Lahore since May 14, 2019 till date

PREVIOUS POSITIONS HELD (Total Post-PhD Experience: Over 5-Years)

- Assistant Professor (BPS-19) in Dept. of Botany, University of the Punjab since Nov 30th, 2015 till June 5th, 2018
- Assistant Professor (BPS-19) in College of Earth and Environmental Sciences (CEES), University of the Punjab since June 05, 2015 till Nov 29, 2015
- Teaching Assistant (TA) in College of Earth and Environmental Sciences (CEES), University of the Punjab since Sep 12, 2013 till June 04, 2014
- Research Associate in HEC Funded Research Project No.1032 (2008-2011) (worth 4.8 Million PKR) in Environmental Biotechnology Lab. (F4), Department of Botany, University of the Punjab, since 2008 till 2011.

PRESTIGIOUS RESEARCH & ACADEMIC AWARDS

1. "National First Runner Up Award" winner (Co-Inventor); Global Cleantech Innovation Program (GCIP 2016) run by UNIDO Pakistan Level, for developing a patentable product "SAVOR" and earning US$15000.00 as Prize Money and Mentorship Services in Silicon Valley California.
2. Finalist Award from Global Cleatech Innovation Program (GCIP 2015) for developing a patentable product 'Solar Biogasifier' at UNIDO Pakistan Level.
3. Award from HEC, International Research Support Initiative Programme (IRSIP), during PhD for advance collaborative research in Cornell University NY, USA
4. Scholarship Award from HEC Indigenous Program Batch VII. (PIN ID 117-5568-BM7-109).
5. Merit Scholarship from Department of Botany, University of the Punjab Lahore. (Year 2003, 2004, 2005, 2006).
6. Award for securing 3rd position in Workshop on '*Identification and Conservation of Micromycetes'* held in Aug 2007 at Institute of Mycology and Plant Pathology (Current: Institute of Agricultural Sciences), University of The Punjab Lahore.

EXPERIENCE AS RESEARCH SUPERVISOR

PHD RESEARCH THESIS SUPERVISED

1. Hajira Younas. PhD Thesis completed 09-05-2023. Notification No. Ph.D. (R)/102/2023

PHD RESEARCH THESIS SUPERVISION

1. Samreen Aslam. PhD Synopsis approved from AS&RB of University of the Punjab Lahore.
2. Muntaha Munir. PhD Synopsis approved from AS&RB of University of the Punjab Lahore.
3. Um e Laila: PhD Synopsis approved from AS&RB of University of the Punjab Lahore.

MS/MPHIL RESEARCH THESIS SUPERVISED

Thesis Completed

35. Faiza Yahya (2024) Modelling assisted phytoextraction of heavy metals from tannery origin leachate and sediments.

34. Maryam Munawer (2024) Study the recuperative potential of aquatic weed derived biochar on wheat growth and yield under drought stress.

33. Sidra Tul Muntaha (2024) Role of mixed aquatic weed biochar extract for improving soil nutrients and spinach productivity

32. Fatima Iqbal (2023). Phytobial remediation approach of heavy metals from tannery solid waste leachate and sediment

31. Aymen (2023). Biochar-assisted phytoextraction of heavy metals from tannery effluents by *lemna minor* L.

30. Isha Shakoor (2023). Nickel removal potential of *Eichhornia crassipes* (Mart.) Solms and some algae from wastewater for its reuse in cultivation of *Helianthus annuus* L.

29. Sania Zulfiqar (2023) UoL Assessment of aquatic weed derived biochar as soil ameliorant for the pre-eminent growth of eggplant (*Solanum melongena* L.) and okra (*Abelmoschus esculentus* L.)

28. Javeria Malik (2023) UoL Effect of crop weed derived biochar on productivity of fenugreek (*Trichonella foenum graecum* L.) and Chilli (*Capsicum annuum* L.)

27. Jazba Akram (2023) UoL Influence of biochar application on physico-chemical properties and microbial dynamics in agricultural soil

26. Jawaria Saber (2023) UoL Effect of composite biochar amended soil on productivity of sunflower (*Helianthus annuus* L.) varieties

25. Maryam Hameed (2023) LCWU Evaluating the effect of municipal solid waste biochar and compost on soil microbial dynamics and yield performance of marigold (*Tagetes erecta* L.)

24. Khadija Noor (2023) LCWU Evaluating the efficacy of composite biochar and nano biochar for yield performance of sunflower and microbial dynamics in soil

23. Tania Rani (2022). GCU Partitioning of heavy metals in ornamental plants during phytoextraction of heavy metals from tannery solid waste.

22. Mariam Jabeen (2022). GCU Sustainable utilization of biobased feedstocks for biochar formation and its application in soil.

21. Zoha Altaf (2022). GCU Characterization and soil application of bonechar derived under different pyrolysis temperature.

20. Naveed Hashim (2022). Characterization of aquatic weed biochar and its impacts on plant available soil nutrients

19. Khadija Salamat (2022). Characteristics of *Typha angustifolia* L. derived biochar and its effects on growth of some vegetables

18. Fiaza Idrees (2022). Sustainable management of municipal solid waste through compost and biochar and their use as soil amendment

17. Mishkat ul Huda (2022). Assessment of fertilizer potential of biochar derived from bones and chicken feathers to improve growth of sunflower

16. Amina Sultan (2021). Tracing heavy metal spatial pollution spread in the vegetables cultivated with wastewater of Nullah Saim Gujranwala.

15. Adnan Hussain (2021). Characterization and soil application of biochar composites derived from rice straw and waste bones.

14. Sonal Chaudhry (2021). Nickel phycoremediation with *Arthrospira platensis* Gomont. Session 2019-21.

13. Farwa Iqbal (2021). Using aquatic weed biomass as feedstock for biochar production and its application in soil

12. Sana Nadeem (2020). Bacterial-assisted phytoextraction of heavy metals from tannery solid waste-derived biochar.

11. Shazia Manzoor (2020). Phytoextraction of Heavy metals from rainwater diluted combined effluents of River Ravi by some selected hydrophytes.

10. Amna Saher (2020). Rhizospheric microbial community dynamics of co-cultivated plants irrigated with different type of wastewater.

9. Javeria Afzal (2020). Fungal assisted phytoextraction of heavy metals from tannery solid waste by *Helianthus annuus* L.

8. Saneela Mehtab (2020). Effect of rainwater diluted tannery effluent on heavy metal removal potential of *Phragmites australis* L. and some algae (*Oedogonium* and *Pithophora*).

7. M. Farhan Farooq (2020). Optimizing sowing date of wheat cultivar Fakher e Bhakkar using DSSAT CERES wheat.

6. Zain Akhtar (2020). Impact of some indigenous fungi on seed germination of some ornamental plants irrigated with tannery effluent from Kasur.

5. Arooj Fatimah. (2016). CEES, PU "Effect of Cotton Crop Residue on Wheat Crop in Soil of Hasilpur."

4. Rabeea Islam Khan. (2016). CEES, PU "Rice Crop Residue Management Practices and its Impacts on Soil Productivity and Wheat Crop Yield in Lahore."

3. Tahira Shauket. (2015). Hierarchical Chromium Biomagnification Study around Kasur Tannery Waste Water Management Agency.

2. Talha Naseem. (2015). CEES, PU "Landfill site Management of Hazardous Tannery Solid Waste through Ornamental Plants."

1. Sidra Latif. (2014). CEES, PU "Evaluation of Health Hazards in Tannery Workers on the basis of Selected Health Indicators."

BS/M.SC RESEARCH THESIS SUPERVISED

Completed

27. Ali Saleem (2024) Evaluating the efficacy of feather waste derived biochar on nutrients retention and leaching in agricultural soil

26. Aqsa Ishaq (2024) Effect of pyrolysis temperature on characteristics of biochar derived from rice straw and its application in soil for growth of sunflower.

25. Misbah Malik (2024) Exploring the potential feasibility of waste animal bones as bone char for the growth of *Helianthus annuus* L

24. Malaika (2024) Study the lead phytoremediation potential of *Lemna minor* L.

23. Anila Nazeer (2023) BS ADP Thesis Title "Heavy metals assessment in vegetable irrigated with industrial effluents from Bholaki industrial line, District Kasur, Punjab

22. Rabia Noor (2023) BS ADP Thesis Title "Valorization of peanut shell biochar and its application as soil ameliorant for growth of selected vegetable crops"

21 Malaika Noor (2023) BS ADP Thesis Title "An appraisal of pollution level in effluents, irrigated soil and harvested plants in the industrial area of Muridke and Sadhuki"

20. Jamila Bibi (2023) BS ADP Thesis Title "Comparative performance of biochar derived from diverse types of biowastes in reducing drought stress in wheat crop"

19. Aroosha Liaqat (2023) BS Thesis Title "Evaluating rhizospheric microbiome dynamics in biochar amended soil"

18. Zarnish Shahid (2023) BS Thesis Title "Non-destructive assay of sunflower seeds cultivated in biochar amended soil using near-infrared spectroscopy"

17. Maryam Munawar. (2022) MSc Thesis Title "Soil amendments with algae and *Lemna minor* L. derived biochar to improve vegetable productivity".

16. Nitasha Arif. (2022) MSc Thesis Title "Derivation of biochar form aquatic weeds of Kamoke for application as soil organic amendment."

15. Sidra-Tul-Muntaha. (2022) MSc Thesis Title "Role of selected fungi and rice straw derived biochar in phytoextraction of heavy metals from polluted soil by *Helianthus annuus* L."

14. Maryam Iqbal. (2022) MSc Thesis Title "Impact of aquatic weed derived biochar on soil properties and vegetable yield"

13. Mubeen Fatima. (2022) BS Thesis Title. "Mycoremediation of heavy metals from tannery solid waste leachate collected from Kasur Pakistan".

12. Isha Shakoor. (2021). MSc Thesis Title "Isolation of autochthonous fungal spp. from banaspati ghee industry effluent and its and screening for Ni tolerance.

11. Tabinda Rohee (2021). MSc Thesis Title "Biostimulation effects of selected *Trichoderma* spp. on Cr phytoextraction of *Helianthus annuus* L.

10. Faiza Yahya (2021). BS Thesis Title "Potential role of *Pistia stratiotes* L. in the phytoremediation of tannery solid waste leachate and residue biochar on the growth of *Cucumis sativus* L. and *Abelmoschus esculentus* (L.) Moench

9. Ushna Saleem (2020). MSc Thesis Title "Management of weeds collected from housing societies of Gujranwala by making its biochar and utilizing it as soil amendment.

8. Khadija Kausar (2020). MSc Thesis Title "Management of weed biomass collected from agricultural fields of Gujranwala through biochar and its application as soil amendment.

7. Fariha Safdar (2020). MSc Thesis Title "Use of weeds collected from agricultural fields of Gujrat District as feedstock for biochar and its potential application for the growth of some vegetables.

6. Aymen (2020). MSc Thesis Title "Management of noxious weeds through biochar and its applications to improve soil quality.

5. Fatima Waheed (2020). BS Thesis Title "Effect of different types of composts on NPK availability in soil.

4. Shazia Manzoor. (2018). MSc Thesis Title "Management of Cotton Gin Trash through Composting, Biochar and Co-Composting of Biochar.

3. Sidra Shakil and Ume Farwa. (2016). BS Thesis Title Characterization of Tannery Waste Water during Tanning Process and after Treatment at KTWMA Kasur.

2. Maria Farooq, Wajeeha Ijaz and Azka Anwar (2016). BS Thesis Title "Animal Biodiversity Loss due to Road Mortalities on Selected National Highways and Motorways.

1. Ali Shahid Butt (2015). BS Thesis Title "Component Analysis and Characterization of Tannery Solid Waste Collected for Kasur.

RESEARCH FOCI

- Phytoremediation of polluted soils especially with heavy metals arising from different industries such as tannery.
- Management of hazardous solid waste by using phytobial approaches
- Phytoextraction of heavy metals
- Isolation of autochthonous microbes from contaminated media such as tannery effluent and tannery solid waste
- Assisted- phytoremediation of heavy metals
- Waste management through Biochar and compost and application as soil ameliorant

RESEARCH PROJECTS AS PRINCIPAL INVESTIGATOR (PI)

Completed

6. Research Project (Fiscal Year 2022-23) titled "Utilization of bio-based feedstocks for the preparation of biochar as a soil ameliorant." under PURC Grant Program of University of the Punjab, worth grants PKR 0.20 million

5. Research Project (Fiscal Year 2021-22) titled "Biosorption potential of *Arthrospira platensis* for nickel contaminated effluent of Oil and Ghee industry" under PURC Grant Program of University of the Punjab, worth grants PKR 0.20 million

Research Project (Fiscal Year 2020-21) titled Management of local weed biomass through biochar preparation and its use in soil as soil enhance under PURC Grant Program of University of the Punjab, worth grants PKR 0.150 million.

4. Research Project No. 24 (Fiscal Year 2019-20) titled Managing Tannery Solidwaste through Biochar, its Characterization & application as soil amendment. under PURC Grant Program of University of the Punjab, worth grant PKR 0.15 million.
3. Research Project No. 136 (Fiscal Year 2017-18) titled "Effect of Tannery Solid Waste Based Biochar on Soil Chemical and Physic-Chemical Properties and Growth Traits of Sunflower. under PURC Grant Program of University of the Punjab, worth grant PKR 0.15 million.
2. Research Project No. 01 (Fiscal Year 2015-2016) titled 'Microbial community-based soil productivity transition from rice harvest to wheat cultivation in PU fields', funded under PURC Grant Program of University of the Punjab, worth grant PKR 0.15 million.
1. Research Project No. 09 (Fiscal Year 2014-15) titled 'Assessment of health hazards in tannery laborers on the basis of selected health indicators', funded under PURC Grant Program of University of the Punjab, worth grant PKR 0.15 million.

PUBLICATIONS IN PEER REVIEWED RESEARCH JOURNALS/CONFERENCE PROCEEDINGS

- **PUBLICATIONS IN PEER REVIEWED RESEARCH JOURNALS (Updated: May, 2024 Impact Factor ≥90)**

28. Saneela Mahtab, **Aisha Nazir**, Muhammad Shafiq, and Firdaus-e-Bareen, coupling of phycoremediation and phytoremediation technologies to treat tannery. International Journal of Phytoremediation. (2024). BIJP-2022-0319
27. Ujala Ejaz, Shujaul Mulk Khan, Sadia Jehangir, Zeeshan Ahmad, Abdullah Abdullah, Majid Iqbal, Noreen Khalid, **Aisha Nazir**, Jens-Christian Svenning. (2024). Monitoring the Industrial waste polluted stream - Integrated analytics and machine learning for water quality index assessment. Journal of Cleaner Production. 450. 141877. 10.1016/j.jclepro.2024.141877.
26. Younas, Hajira, Firdaus-e- Bareen, **Aisha Nazir**, and Muhammad Shafiq. "Appraisal of Bioavailability and Immobilization of Constituent Metals in Tannery Solid Waste Biochar in Soil Amendments Using Sunflower." Soil and Sediment Contamination: An International Journal, (2024), 1–17. doi:10.1080/15320383.2024.2337355
25. Abdul Basit, Saiqa Andleeb, Iram Liaqat, Nasra Ashraf, Shaukat Ali, Anum Naseer, **Aisha Nazir**, Fahad Kiyani. Characterization of heavy metal-associated bacteria from petroleum-contaminated soil and their resistogram and antibiogram analysis. Folia Microbiol (Praha). 2024 Feb 6. doi: 10.1007/s12223-024-01135-6. Epub ahead of print. PMID: 38319458
24. Hajira Younis, **Aisha Nazir**, Firdaus-e- Bareen, Janice E. Thies (2023) Metabolic profile and molecular characterization of endophytic bacteria isolated from *Pinus sylvestris* L. with growth-promoting effect on sunflower. *Environmental Science and Pollution Research* . https://doi.org/10.1007/s11356-022-25118-7
23. Sobia Mushtaq, Firdaus e Bareen, Asima Tayyeb, **Aisha Nazir** (2023) Autochthonous strains of *Trichoderma* isolated from tannery solid waste improve phytoextraction potential of heavy metals by sunflower, *International Journal of Phytoremediation*, DOI: 10.1080/15226514.2022.2161995
22. Waheed Ullah Khan, Nasim Ahmad Yasin, Sajid Rashid Ahmad, **Aisha Nazir**, Khadija Naeem, Qurat Ul Ain Nadeem, Shahrukh Nawaz, Madiha Ijaz & Arifa Tahir (2023) Burkholderia cepacia CS8 improves phytoremediation potential of *Calendula officinalis* for tannery solid waste polluted soil, *International Journal of Phytoremediation*, DOI: 10.1080/15226514.2023.2183717
21. Shanza Zaka, Muhammad Aqeel, Adeel Mahmood, Ali Noman, Zarrin Fatima Rizvi, Wajiha Sarfraz, **Aisha Nazir**, Komal Arshad, Noreen Khalid (2023) Integrative Evaluation of the Ecological Hazards by Microplastics and Heavy Metals in Wetland Ecosystem. *Bulletin of Environmental Contamination and Toxicology* 110(4):81. doi: 10.1007/s00128-023-03716-6. PMID: 37052723.
20. **Aisha Nazir**, Wajiha Sarfraz, Ditta Allah, Noreen Khalid, Mujahid Farid, Muhammad Shafiq, Firdaus-e-Bareen, Zarrin Fatima Rizvi, Nayab Naeem (2023) Synergistic impact of two autochthonous saprobic fungi (*A.*

niger and *T. pseudokoningii*) on the growth, ionic contents, and metals uptake in *Brassica juncea* L. and *Vigna radiata* L. under tannery solid waste contaminated soil, *International Journal of Phytoremediation*, DOI: 10.1080/15226514.2023.2166457

19. Anum Naseer, Saiqa Andleeb, Abdul Basit, Shaukat Ali, Muhammad Siraj Ud-Din, Nazish Mazhar Ali, Iram Liaqat, **Aisha Nazir** (2023). Efficacy of cow and buffalo dung on vermiremediation and phytoremediation of heavy metals via Fourier-transform infrared spectroscopy and comet assay. *Environmental science and pollution research international*, 10.1007/s11356-022-24714-x. Advance online publication. https://doi.org/10.1007/s11356-022-24714-x

18. Wajiha Sarfraz, Mujahid Farid, Noreen Khalid, Zarrin Fatima Rizvi, Zaki ul Zaman Asam, **Aisha Nazir**, Nayab Naeem, Sheharyaar Farid, Shafaqat Ali (2022). Ameliorative role of foliar Zn-lysine application on wheat (*Triticum aestivum* L.) stressed by Tannery Wastewater. *Physiology and Molecular Biology of Plants* https://doi.org/10.1007/s12298-022-01265-6**.**

17. Qurat-ul-Ain, Muhammad Shafiq, **Aisha Nazir** and Firdaus-e- Bareen (2023) Fertilizer perspective of biochar and compost derived from biomass of *Parthenium hysterophorus* in the rice wheat system in Punjab, Pakistan. *Journal of Plant Nutrition*. DOI: 10.1080/01904167.2022.2155555

16. Isha Shakoor, **Aisha Nazir**, Sonal Chaudhry, Qurat-ul-Ain, Firdaus-e-Bareen, and Sergio C. Capareda. (2022). "Autochthonous *Arthrospira platensis* Gomont Driven Nickel (Ni) Phycoremediation from Cooking Oil Industrial Effluent" *Molecules* 27, No. 16: 5353. https://doi.org/10.3390/molecules27165353

15. Hajira Younas, **Aisha Nazir**, Zakia Latif, Janice E. Thies, Muhammad Shafiq, and Firdaus-e-Bareen. (2022). Biosorption potential and molecular characterization of metal-resistant autochthonous microbes from tannery solid waste. *Archives of microbiology*, *204*(10), 651. https://doi.org/10.1007/s00203-022-03238-5)

14. Hajira Younas, **Aisha Nazir**, Firdaus-E Bareen. (2022). Application of microbe-impregnated tannery solid waste biochar in soil enhances growth performance of sunflower. *Environmental Science and Pollution Research*. DOI: 10.1007/s11356-022-19913-5.

13. Faisal Javeed, **Aisha Nazir**, Firdaus-e-Bareen, Muhammad Shafiq, Miklas Scholz. (2022). Industrial water treatment within a wetland planted with *Hemarthria compressa* and subsequent effluent reuse to grow *Abelmoschus esculentus. Journal of Water Process Engineering* 45: 102511.

12. Ume Laila, **Aisha Nazir**, Firdaus-e-Bareen, Muhammad Shafiq. (2022). Role of combined use of co-composted tannery solid waste and its autochthonous microbes in enhancing for potent phytoextraction of toxic metals and stress abatement in sunflower. *International Journal of Phytoremediation*. BIJP-2021-0466.

11. Aisha Nazir, Muhammad Shafiq and Firdaus-e-Bareen. (2022). Fungal biostimulant-driven phytoextraction of heavy metals from tannery solid waste contaminated soils. *International Journal of Phytoremediation*. 24:1

10. Um-e-Laila, Adnan Hussain, **Aisha Nazir**, Muhammad Shafiq, Firdaus-e-Bareen. (2021). Potential Application of Biochar Composite Derived from Rice Straw and Animal Bones to Improve Plant Growth. *Sustainability* 13:11104.

9. Aisha Nazir, Um-e- Laila, Firdaus-e- Bareen, Erum Hameed and Muhammad Shafiq. (2021). Sustainable Management of Peanut Shell through Biochar and Its Application as Soil Ameliorant. *Sustainability* 13: 13796.

8. Qurat-ul-Ain, **Aisha Nazir**, Sergio C. Capareda, Muhammad Shafiq and Firdaus-e-Bareen. (2021). Valorization of Cotton Gin Trash through Thermal and Biological Conversion for Soil Application. *Sustainability* 13: 13842.

7. Hajira Younis, **Aisha Nazir**, Firdaus-e-Bareen (2020). Management of Tannery Solid Waste (TSW) through Pyrolysis and Characteristics of Its Derived Biochar. *Polish Journal of Environmental Studies*. DOI: https://doi.org/10.15244/pjoes/117662.

6. Firdaus-e-Bareen, Khadija Rafiq, Muhammad Shafiq, **Aisha Nazir** (2019). Uptake and Leaching of Cu, Cd, and Cr after EDTA Application in Sand Columns Using Sorghum and Pearl Millet. *Polish Journal of Environmental Studies*. 28: 4. 2065-2077.

5. Muhammad Shafiq, Tahira Shaukat, **Aisha Nazir**, Firdaus-e- Bareen, (2017). Modeling of Cr contamination in the agricultural lands of three villages near the leather industry in Kasur, Pakistan, using statistical and GIS techniques. *Environmental Monitoring Assessment*. 189:423. pp1-18.

4. Aisha Nazir, Firdaus-e-Bareen, (2011). Synergistic effect of *Glomus fasciculatum* and *Trichoderma pseudokoningii* on *Heliathus annuus* to decontaminate tannery sludge from toxic metals. *African Journal of Biotechnology*, Vol. 10 (22), pp. 4612-4618, ISSN 1684-5315 Available online at http://www.academicjournals.org/AJB.

3. Firdaus-e-Bareen, **Aisha Nazir**, Sadaf Ahmad, (2011). Role of live autochthonous fungi in removing toxic metals from tannery and textile effluents. *African Journal of Biotechnology*, Vol. 10 (32), pp. 6072-6081, Available online at http://www.academicjournals.org/AJB.

2. Firdaus-e-Bareen, **Aisha Nazir**, 2010. Metal decontamination of tannery solid waste using *Tagetes patula* in association with saprobic and mycorrhizal fungi. *Environmentalist*, 30: 45-53 DOI 10.1007/s10669-009-9241-5.

1. Aisha Nazir, Firdaus-e-Bareen**.** 2008 Role of *Helianthus annuus* and associated rhizosphere fungi in uptake of heavy metals from solid waste amended soil. *Pakistan Journal of Phytopathology* 20 (88-97).

- **PUBLICATIONS IN CONFERENCE PROCEEDINGS**

5. Muhammad Shafiq, **Aisha Nazir**, Firdaus-e-Bareen, 2010. Effect of Composting on Phytoextraction of Heavy Metals from Tannery Solid Waste Amended Soil. *Journal of Solid Waste Technology and Management*. Vol. 36:3, 739. Accession #53919380. (Y- Category Journal).

4. Aisha Nazir, Firdaus-e-Bareen, 2008. Plant biodiversity and its associated fungal flora in soil polluted with tannery wastes *In*: Proceedings of the 2nd International Seminar on Medicinal Plants: Applications of Medicinal Plants in Pharmaceuticals, Environment and Industries'. (ISMP-2010) (Jan 14-16, 2010), held at Lahore College for Women University, Lahore.

3. Aisha Nazir, Firdaus-e-Bareen, 2008 Role of Helianthus annuus and associated rhizosphere fungi in uptake of heavy metals from solid waste amended soil. *Pakistan Journal of Phytopathology* 20 (88-97).

2. Aisha Nazir, Firdaus-e-Bareen, 2008. Tannery waste: a potential environmental risk. *In*: Proceedings of the 1st International Conference on Role of Chemistry for Environmental Preservation (RCEP 2008) held on June 14, 2008. (Hussain, M. ed.) 38-43 pp.

1. Aisha Nazir, Firdaus-e-Bareen, 2008. Phytoextraction of Heavy metals from Tannery Solid Waste amended soil using Spinacia oleracea L. and associated rhizosphere fungi. *In*: Proceedings of the 1st International Seminar on Medicinal plants Isolation and Applications (ISMP-2008) held on May 21-23, 2008. 92-100 pp.

ORAL PRESENTATIONS (INTERNATIONAL/NATIONAL CONFERENCE)

20. Samreen Aslam and AISHA NAZIR, "A potential use of biochar derived from municipal solid waste to evaluate the agronomic yield of sunflower" 2nd International Conference on Recent Innovations in Plant Sciences and Natural Products & 4th Natural Product Exhibition -2024. (co-author)

19. Ume Laila and AISHA NAZIR and Firdaus e Bareen A potential feasibility of rice straw and waste cow bones as biochar composite for agronomic yield of sunflower 4 th International Conference on Emerging Trends in Earth and Environmental Sciences University of the Punjab Lahore, Lahore-54590, Pakistan December 4-6, 2023 International (co-author)

18. Samreen Aslam and AISHA NAZIR Sustainable management of municipal solid waste through biochar and its application as soil ameliorant 4 th International Conference on Emerging Trends in Earth and Environmental Sciences University of the Punjab Lahore, Lahore-54590, Pakistan December 4-6, 2023 (co-author)

17. AISHA NAZIR and Ume Laila "Characterization and agronomic efficiency of N-Rich biochar derived from waste chicken feathers" in the 8th international and 17th national conference on "advances in plant science in the era of climate change" organized by Pakistan Botanical Society at the University of the Punjab and GC University Lahore, Pakistan. October 26-28, 2022 (co-author)

16. AISHA NAZIR and Hajira Younis "biosorption potential and molecular characterization of metal resistant autochthonous microbes from tannery solid waste" in the 8th international and 17th national conference on "advances in plant science in the era of climate change" organized by Pakistan Botanical Society at the University of the Punjab and GC University Lahore, Pakistan. October 26-28, 2022

15. AISHA NAZIR and Muhammad Shafiq. (2022). Achieving pollution abatement of tannery solid waste through biochar at open dumps – a huge threat to related SDGs. Oral Presentation in the 1st International Conference on Sustainable Development Goals (ICSDGs 2022) organized by Lahore College for Women University, Lahore on 29-31 March 2022.

14. AISHA NAZIR and Muhammad Shafiq. (2022). Challenges of representative sampling of tannery solid waste and developing reliable baseline information. Oral Presentation in the 19th International Conference on Statistical Sciences organized by Department of Mathematics and Statistics, University of Agriculture, Faisalabad (Pakistan) on March 17-19, 2022.

13. AISHA NAZIR. (2021). Developing biochar composite of rice straw and animal bones as slow-release fertilizer for vegetable cultivation**.** An Invited Talk given in the 4th International Conference on Life Sciences and Biotechnology (ICOLIB) - Towards Sustainable Development: Application Of Biosciences To Improve Welfare And Quality Of Life" organized by Department of Biology, Faculty of Mathematics and Natural Sciences, University of Jember, Jember – INDONESIA 68121 on Nov 15-16, 2021.

12. Aisha Nazir. (2021). Deriving Biochar Composites from Weed Biomass and Animal Bones as Slow Releasing Nutrients Source in Soil. Oral Presentation in the 4th International Symposium on Advances in Molecular Biology of Plants and Health Sciences organized by Centre of Excellence in Molecular Biology (CEMB), University of the Punjab Lahore on Dec 23-24, 2021.

11. Shafiq, M., AISHA NAZIR, Mubeen, R. Zubair, F., Batool, S., Lodhi, S.K., Khan, F. (2019). Managing on and off field Biomass of Parthenium hysterophorus: brain waving future configuration of UAV with UGV. In: Technical Workshop on Remote Sensing of Parthenium in Pakistan organized by Centre for Agriculture and Bioscience International (CABI) UK, Islamabad Pakistan Office at Ramada Islamabad on Oct 09-10th, 2019.

10. Younas, H., AISHA NAZIR, Bareen, F. (2019). Metal immobilization and uptake potential of tannery solid waste derived biochar and its effect on the growth of Helianthus annuus L. In: International Conference on Smart Plantation "An Ultimate Solution to Climate Change" (ICSP 2020) held on 2-4 March, 2020 at Lahore College for Women University (LCWU), Lahore, Pakistan.

9. AISHA NAZIR. Variation in the rhizospheric microbial community of co-cultivated plants irrigated with different type of wastewater. In: International Conference on Smart Plantation "An Ultimate Solution to

Climate Change" (ICSP 2020) held on 2-4 March, 2020 at Lahore College for Women University (LCWU), Lahore, Pakistan.

8. AISHA NAZIR, Asma Imtiaz, Muhammad Shafiq and Firdaus-e-Bareen. (2017). Biofungicidal Application of Crude Algal (Microspora sp.) Extracts Against Fusarium wilt in tomato. In: the 7th International Conference on Algal Biomass, Biofuels and Bioproducts on June 18-21, 2017 Miami FL USA.

7. Maryam Shuja, AISHA NAZIR, Firdaus-e-Bareen and Muhammad Shafiq. Potential Of Biotic and Abiotic Positive Reinforcers for Enhancing Heavy Metal Mobility in Complex Tannery Waste Medium. Presented In: International Conference on Emerging Trends in Life Sciences for Sustainable Development, 9-10 Oct 2014, at Forman Christian College (A Chartered University) Lahore.

6. AISHA NAZIR, Firdaus-e-Bareen, Janice E. Thies and Muhammad Shafiq. Selected Fungal Biostimulants and Their Role in Heavy Metal Phytoextraction from Tannery Solid Waste Contaminated Soils. Presented In: International Conference on Plant Sciences, 22-24 Sep, 2014, At Govenrment College University Lahore.

5. AISHA NAZIR, Suitability of Tannery Waste Polluted Soils for Harnessing. Bioenergy Crops Along with Heavy Metal Phytoextraction in International Conference on Environment and Sustainable Development 16-17, Dec 2014 at Government College University, Lahore.

4. AISHA NAZIR, Role of *Helianthus annuus* L. and associated rhizosphere fungi in uptake of heavy metals from tannery solid waste amended soil in the 3rd International Conference on Plant Pathology and 7th Biennial Meeting of Pakistan Psychopathological Society. (19-21 Nov. 2007), held at Department of Mycology and Plant Pathology. Punjab University Lahore.

3. AISHA NAZIR, Role of Rhizosphere fungi in Enhancement of Metal Uptake from Tannery Sludge Amended soil by Brassica juncea L. International Conference of Plant Scientists. (10th National Meeting of Plant Scientists) held on 21-24 April, 2008 at Department of Botany, University of Agriculture, Faisalabad.

2. AISHA NAZIR, Phytoextraction of Heavy metals from tannery solid waste amended soil using *Spinacia oleracea* L. and associated rhizosphere fungi. In: The 1st International Seminar on Medicinal Plants: Isolation and Applications (ISMP-2008) held on May 20-023, 2008 at Lahore College for Women University, Lahore.

1. AISHA NAZIR, Plant biodiversity and its associated fungal flora in soil polluted with tannery wastes. In: The 2nd International Seminar on Medicinal Plants: Applications of Medicinal Plants in Pharmaceuticals, Environment and Industries (ISMP-2010) held on Jan 14-16, 2010 at Lahore College for Women University, Lahore.

POSTER PRESENTATIONS (INTERNATIONAL/NATIONAL CONFERENCES)

3. Aisha Nazir. Displayed Poster and Product on "Organic PGRs (Plant Growth Regulators / Plant Growth Promoting Substances)" in the National Exhibition on NATURAL & ORGANIC PRODUCT held on March 30-31, 2021 by Department of Botany, University of Okara.

2. Aisha Nazir, Tannery waste: A potential environmental risk in the 1st International Conference on Role of Chemistry for Environmental Preservation (RCEP 2008) June 2008 Organized By: The Royal Society of Chemistry UK & THE ENVIRON MONITOR. To be held at Hotel Ambassador, Lahore.

1. Aisha Nazir, In Vitro interaction studies between different resistant fungal strains isolated from tannery waste in the International Research Conference: Sponsored Jointly by Pakistan Academy of Sciences Lahore Chapter and University of South Asia.

SCIENTIFIC / PROFESSIONAL WORKSHOPS ATTENDED

14. The International Biochar Initiative 2022 Symposium, "Raising Climate Ambitions with Biochar." organized by 4159 East Lake Road, Canandaigua, NY, USA. 6-8 Dec 2022

13. Organized (as team member) One-Week International Phycological Training Workshop on Algal Ecology & Biotechnology. Institute of Botany, University of the Punjab Lahore Nov 21-25, 2022

12. Online Webinar on "Waste Management in Developing Countries" organized by Center for Remote Sensing, University of the Punjab Lahore Sep 13, 2022

11. Participated and Organized (as team member) in two days Phycological workshop 2022 on "Algal collection techniques and their economic uses." Phycology research Laboratory, Institute of Botany, University of the Punjab Lahore 18-19 May 2022

10. Four-Week Online Faculty Development Program under Quality Enhancement Cell, University of the Punjab Lahore held online on Feb 03-26, 2021.

9. Online Live Training Webinar on "Dissecting the scholarly publishing process - An overview and guidance on publishing" organized by Wiley Publishing on Jan 27, 2021.

8. Online Live Training Webinar on "Strengthening Research Planning using Elsevier Tools–Scopus, Science Direct & Mendeley" held online by Elsevier on Oct 22nd, 2020.

7. Technical Workshop on "Remote sensing of *Parthenium* in Pakistan" organized by Centre for Agriculture and Bioscience International (CABI) UK Pakistan Islamabad Office at Ramada Islamabad on Oct 09-10, 2019.

6. One Day Training Presentation on "QS University Ranking" by Mr. Ashwin Jerome Fernandes, Director QS Ranking Services held on August 28th, 2019 at Al-Raazi Hall, Centre for Undergraduate Studies, Q.A. Campus Lahore, Pakistan.

5. One Day Workshop on "Approaching towards Comprehensive Reduction and Elimination of Persistent Organic Pollutants (POPs) in Pakistan" under the project titled "Comprehensive Reduction and Elimination of Persistent Organic Pollutants (POPs) Funded by United Nations Development Programme (UNDP) and Global Environment Facility (GEF) in collaboration of with Ministry of Climate Change Islamabad Pakistan on Sep 12, 2017 at Hospitality Inn Lahore.

4. Two Day HEC Workshop on "Supervising and Mentoring Research Students" held at CIIT Lahore on Nov 21-22, 2015.

3. The 3rd Faculty Training Program at Department of Microbiology & Molecular Genetics, University of the Punjab, Lahore, in collaboration with Learning Innovative Division of Higher Education Commission (HEC) Pakistan, held on November 17-21, 2014.

2. One Day Workshop on Fluorescent Microscopy on September 24, 2011 at Department of Microbiology and Molecular Genetics, University of the Punjab Lahore.

1. Workshop on 'IDENTIFICATION AND CONSERVATION OF MICROMYCETES' held on Aug. 20-25, 2007 in Department of Mycology and Plant pathology – currently Institute of Agricultural Sciences (IAGS), Punjab University Lahore.

Recognition: Secured 3rd Position in conclusive evaluation of the workshop

MEMORANDUM OF UNDERSTANDING (MOU) SIGNED (AS FOCAL PERSON)

1. As Focal Person from Department of Botany, an MoU was signed (2015-16) with Water and Sanitation Agency (WASA) Faisalabad on Apr 10, 2017 for 2-years to collaborate in applied research about constructed wetland technology for industrial effluent treatment.

SUBJECTS TAUGHT

Since 2014, I have been teaching following subjects to students of BS, MSc, MS/MPhil Botany, MS and BS Environmental Sciences; M.Sc. Applied Hydrology and BS Biochemistry and Biotechnology:

- Soil Science
- Autecology
- Water Pollution; its Management and Control
- Environmental Biotechnology
- Environment and Ecosystem
- Biodiversity & Systematics
- Environmental Biology
- Plant Nutrition and Soil Fertility
- Hazards of Heavy Metals

- Plant Anatomy
- Synecology

TRAVEL GRANTS FOR INTERNATIONAL CONFERENCES/TRAININGS

2. Travel Grant by University of the Punjab Lahore for Oral Presentation in "the 7th Elsevier's International Conference on Algal Biomass, Biofuels and Bioproducts held on June 18-21, 2017; Hyatt Regency Miami FL USA.

1. Travel Grant by Higher Education Commission (HEC) Islamabad for availing IRSIP Program in Cornell University NY USA on Oct 05, 2011 till Aug 15, 2012.

MEMBERSHIP OF SCIENTIFIC SOCIETIES

2. Pakistan Botanical Society (Since 2008)

1. Mycops: Institute of Mycology and Plant Pathology, University of the Punjab, Lahore54590 Pakistan.

AWARDS IN CURRICULAR ACTIVITIES

3. Award from Vice Chancellor, University of the Punjab, Lahore as captain of cricket winner team (Girls), Department of Botany, University of the Punjab, Lahore. (2006).

2. Award from Vice Chancellor University of the Punjab Lahore on account of securing 1st position in Badminton Competition (Singles), Department of Botany, University of the Punjab, Lahore. (2006).

1. Award from Vice Chancellor University of the Punjab Lahore for 1st position in Cricket Double Wicket, Department of Botany, University of the Punjab, Lahore. (2005).

COUNTRIES VISITED

1. United States of America (USA) including States NY, NC, FL and PA

COMPUTER SKILLS

Proven skills in: Microsoft Office (MS Word, Excel, Power point, Front page); Internet Surfing / Browsing; Email correspondence; Spreadsheet; Windows based many other programs; Microsoft Outlook.

PROFESSIONAL REFEREES

- Will be furnished on demand.