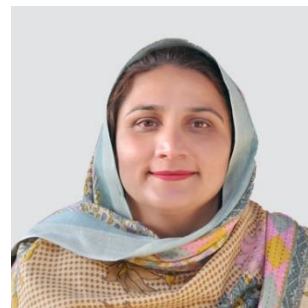


# Dr. Shamyla Nawazish

Associate Professor (Environmental Sciences)

shamyla@cuiatd.edu.pk



## Institutional goal:

To become a part of well reputed institution, I want to get success in a challenging environment where I can use my psychomotor skills for the benefit of students and layman of the society. The stepwise achievement of individual and organizational goal is at prime priorities. COMSATS institute of Information Technology, Abbottabad, where presently I am serving as an Assistant Professor, can be a suitable consign for fulfillment of set targets near future. The details of my resumes are given below

## EDUCATIONAL STATUS:

DEGREE	INSTITUTE	MARKS
Ph.D. Botany(HEC Awardees')	University of Agriculture, Faisalabad.	4/4 (2012)
M. Phil (Botany)	University of Agriculture, Faisalabad.	88% (2006)
M. Sc. (Botany)	Lahore College for Women University, Lahore	62%(2002)
B. Sc.	University of the Punjab, Lahore.	56.14 % (1999)
F. Sc. (Pre-Medical)	Board of Intermediate & Secondary Education, Faisalabad	54.16% (1996)
Matriculation	Board of Intermediate & Secondary Education Faisalabad.	81 % (1994)

## Date of Birth

13.03.1977

## DATE OF PH.D. COMPLETION

31.12.2012

## Professional Status

Assistant Professor in Environmental Sciences, CUI, Abbottabad from July14, 2014-to Date

Teaching experience at CUI/Courses (fall-14 and sp-15)

- 1.Environmental Hazards and Management of Natural Disasters
2. Fundamentals of Environmental Sciences
3. Fundamentals of Biology
4. Climate Change and Global Initiatives

### **RESEARCH EXPERTISE**

Air pollution monitoring, Drought, Plant physiology, Medicinal Plants, Taxonomy

### **COMPUTER SKILLS:**

I am able to operate following software programs with ease.

- ✚ MS Word, MS Excel, MS Power Point, Windows, Internet etc.

### **RESEARCH EXPERIENCE:**

- ✚ Two year HEC funded research projects entitled "Florescence is the premier determinant of Gaseous exchange and Photosystem II fluorescene as premier determinants of drought tolerance in Maize (*Zea Mays* L. ) from 2007 to 2009.
- ✚ On working experience as a **Research Assistant** in a HEC funded Project entitled "Judicious control of Punjab weeds in Pakistan" at Department of Botany, University of Agriculture Faisalabad, PAKISTAN from **2009** to **2010**.
- ✚ Working on health awareness and character building of the individuals to provide career in United Nation Organization certified institution in **2013**.
- ✚ Field trials and analysis of Bio-fertilizer (Feng-Shuo) collaboration with Chinese's experts in process
- ✚ Gradient analysis of vehicular and industrial emissions of Hattar industrial Haripur to Mansehra, KPK ongoing funded by Higher Education Commission, Islamabad (0.5M)

### **LIST OF PUBLICATIONS (Published ) AT CUI:**

#### **7a. Published Papers: (Only HEC recognized and included in the web of knowledge)**

#	Publication Details (e.g., Title, Author(s), Journal, Publisher, Country where published, Vol. No., Page No., Year, etc.)	Impact Factor	Web-link (*Mandatory)	Page #
1.	Shamyla Nawazish,S. M. Bukhari,A. Muhammad,I U Khan,Aj Alhassan,M Hussain,Asma Zaidi "Correlation analysis of toxic metals on Motorwayand National Highway" Kuwait Journal of Science, 2017	0.25	<a href="http://journals.ku.edu.kw/kjs/index.php/KJS">http://journals.ku.edu.kw/kjs/index.php/KJS</a>	121-128
2	Shamyla N, Mansoor H and Shaista Naurin. 2006. Leaf anatomical adaptations of <i>Cenchrus ciliaris</i> L. from Salt Range, Pakistan against drought stress. Pakistan Journal of Botany, 38(5): 2006, 1723-1730	1.24	Pakistan Botanical Society web	1723-1730
3	Muhammad A, Shamyla N and Habib Ather.2007. Are chlorophyll fluorescence and photosynthetic capacity potential	1.24	Pakistan Botanical Society web	1123-1131

	physiological determinants of drought tolerance in Maize ( <i>Zea mays</i> L.)". Pakistan Journal of Botany, 2007, 39(4): 1123-1131.			
4	Shamyla N, Muhammad A, Muhammad Y. Ashraf and Amer Jamel. 2012. Effect of automobile related pollution (Pb <sup>2+</sup> and Cd <sup>2+</sup> ) on some physiological attributes of wild plants. International Journal of Agriculture and Biology, Available online	1.05	IJAB online version	953-958
5	Shamyla Nawazish, S. M. Bukhari, Qaisar Mahmood, Arshad Pervez, Aamir Muhammad, A. Zaidi "Comparative evaluation of major pollutants from different sites of Pakistan" Journal of the Indian Chemical Society, Volume 94, Page 1, 2017	0.55	<a href="http://indianchemicalsociety.in/user/view-entity?sta=accept&amp;v=A">http://indianchemicalsociety.in/user/view-entity?sta=accept&amp;v=A</a>	1-5
6	"Assessment of Pb <sup>2+</sup> and Cd <sup>2+</sup> among planted and natural vegetation prone to vehicular pollution" Shamyla Nawazish, S. M. Bukhari, M. A. Pervez, I. Khan, Asma Zaidi, M. Aamir Pakistan Journal of Weed Science Research Volume 23, Issue 1, Page 41, 2017	HEC recognize d IF :1.35	<a href="http://www.weedscience.com">www.weedscience.com</a>	41-48
7	Abida Kalsoom Khan, Ain Us Saba, Shamyla Nawazish, Fahad Akhtar, Rehana Rashid, Asadullah Mir Bushra Nasir, Carrageenan Based Bio nanocomposites as Drug Delivery Tool with Special Emphasis on the Influence of Ferromagnetic Nanoparticles. Oxidative Medicine and Cellular Longevity Volume 2017 (2017), Article ID 8158315, 13 pages	4.57	<a href="http://www.hindawi.com">http://www.hindawi.com</a>	1-13
8	Aliya Ibrar, Shamyla Nawazish, Imtiaz Khan, Tayyaba Noor, Bushra Uzair, Syed Majid Bukhari, Farhan a. Khan, Asma Zaidi. Triazolothiadiazines as a new class of efficient DNA intercalating agents, acta poloniae pharmaceutica published, December 2017	0.47	mfbojars@cyf-kr.edu.pl	1405-14119
9	Naveed Ullah, Farha Mukhtar, Saiqa Muneer, Shamyla Nawazish, Mariam Aijaz, Ghulam Murtaza. The emerging role of intestinal and hepatocellular transporters in drug interactions with botanical supplements, published in Molecules 02 feb, 2018	3.06	<a href="https://www.ncbi.nlm.nih.gov/pubmed/29065448">https://www.ncbi.nlm.nih.gov/pubmed/29065448</a>	1-20
10	Association of nephrolithiasis with drinking water quality and diet in Pakistan	1.186	<a href="https://www.researchgate.net/publication/3404">https://www.researchgate.net/publication/3404</a>	1289-1297

	Suneela Jadoon, Jin Wang, Qaisar Mahmood, Xu-Dong Li, Bibi Saima Zeb, Imran Naseem, Malik Tahir Hayat , Shamyla Nawazish, Allah Ditta, Environmental Engineering and Management Journal. 2020		99345_Association_of_nephrolithiasis_with_drinking_water_quality_and_diet_in_Pakistan	
11.	Synthesis of Gallus gallus domesticus eggshells and magnetite bio-composite for Cr(VI) removal: adsorption kinetics, equilibrium isotherms and thermodynamics. Huma Ajab, Mehpara Khatoun Asim Yaqub, Muhammad Gulfaraz ,Shamyla Nawazish, Farhan A. Khan, John Ojur Dennis, Muhammad Junaid, Desalination and water treatment, 2021,	1.25	<a href="https://doi.org/10.5004/dwt.2021.27753">https://doi.org/10.5004/dwt.2021.27753</a>	161–173
12.	Fluorene-Based Fluorometric and Colorimetric Conjugated Polymers for Sensitive Detection of 2,4,6-Trinitrophenol Explosive in Aqueous Medium, Razi Batool, Sohail Anjum Shehzad, Shamyla Nawazish, Umer Farooq, Cong Yu, 2022. ACS Omega	4.1	<a href="https://doi.org/10.1021/acsomega.1c05644">https://doi.org/10.1021/acsomega.1c05644</a>	1057-1070
13	Exploring Health Impacts of Occupational Exposure to Carbon Monoxide in the Labour Community of Hattar Industrial Estate, Suneela Jadoon, Shamyla Nawazish, Qaisar Mahmood, Asif Rafique, Summar Sohail and Asma Zaidi, Atmosphere, 2022	3.11	<a href="https://doi.org/10.3390/atmos13030406">https://doi.org/10.3390/atmos13030406</a>	1-15
14	Development of AIEE active fluorescent and colorimetric probe for the solid, solution, and vapor phase detection of cyanide: smartphone and food applications. Shumaila Majeed, Tahir Waseem, Muhammad Imran, Shamyla Nawazish , Suhail Anjum Shahzad, Analyst	4.616	DOI: <a href="https://doi.org/10.1039/D2AN00937D">https://doi.org/10.1039/D2AN00937D</a>	
15	Aggregation induced emission-based fluorenes as dual-channel fluorescent probes for rapid detection of cyanide: applications of smartphones and logic gates, RSC advances. Shumaila Majeed, Muhammad Tahir Waseem, Hafiz Muhammad Junaid, Gul Shahzada Khan, Shamyla Nawazish, Tariq Mahmood, and Sohail Anjum Shahzad. RSC Advances	4.0	DOI: 10.1039/d2ra03119a	1889 7- 1891 0
16.	Clinical prevalence antibiogram profiling and gompertz growth kinetics of resistant Staphylococcus epidermidis treated with nano particles of rosin extracted from <i>Pinus roxburghii</i> . Zahid majeed, Shamyla Nawazish , Basharat Ahmed . Antibiotics	5.22	<a href="https://www.mdpi.com/2079-6382/11/9/1270">https://www.mdpi.com/2079-6382/11/9/1270</a>	<a href="https://doi.org/10.3390/antibiotics11091270">10.3390/antibiotics11091270</a>
17.	Wood Ash Additive for Performance Improvement of Gelatin-Based Slow-Release Urea Fertilizer. Eefa Mansoor,	3.8	<a href="https://doi.org/10.3390/agriculture12101743">https://doi.org/10.3390/agriculture12101743</a>	

	Zahid Majeed, Shamyala Nawazish , Agriculture			
18	Development of AIEE active fluorescent and colorimetric probe for the solid, solution, and vapor phase detection of cyanide: smartphone and food applications, Analyst	4.5	<a href="https://doi.org/10.1039/D2AN00937D">https://doi.org/10.1039/D2AN00937D</a>	
19.	Clinical prevalence antibiogram profiling and gompertz growth kinetics of resistant Staphylococcus epidermidis treated with nano particles of rosin extracted from Pinus Roxburghii , Antibiotics	5.2	<a href="https://www.mdpi.com/2079-6382/11/9/1270">https://www.mdpi.com/2079-6382/11/9/1270</a>	
20.	Health Impacts of Surface Ozone in Outdoor and Indoor Environments of Hattar Industrial Units, KPK, Pakistan, Atmosphere	3.1	<a href="https://doi.org/10.3390/atmos13122002">https://doi.org/10.3390/atmos13122002</a>	
21	AIEE active J-aggregates of naphthalimide based fluorescent probe for detection of Nitrobenzene: Combined experimental and theoretical approaches for non-covalent interaction analysis. Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy Volume 290, 5 April 2023,	4.2	<a href="https://doi.org/10.1016/j.saa.2022.122273">https://doi.org/10.1016/j.saa.2022.122273</a>	
22	Effect of varying thickness properties of the slow-release fertilizer films on morphology, biodegradability, urea release, soil health, and plant growth. Plos One .	3.7	. <a href="https://doi.org/10.1371/journal.pone.0278568">https://doi.org/10.1371/journal.pone.0278568</a>	
23	Green Biofabrication of Silver Nanoparticles of Potential Synergistic Activity with Antibacterial and Antifungal Agents against Some Nosocomial Pathogens. Frontiers in Plant Science	6.67		
24	Development and characterisation of MMTreinforced polyacrylonitrile-pullulan nanofibers for controlled permeation of isotretinoin.	2.8	<a href="https://doi.org/10.1080/17458080.2023.2221826">https://doi.org/10.1080/17458080.2023.2221826</a>	
25	Development and characterisation of MMT-reinforced polyacrylonitrile-pullulan nanofibers for controlled permeation of isotretinoin. Journal of Experimental Nanoscience	3.07		
26	Detecting and mitigation DDOS attacks in SDNs using deep neural network, Gul Nawaz, M.Jumaid, Adnan Akhunzada, Abdul Ghani , Shamyala Nawazish and Huma Ajab, Computer Materials at Continua	4.07	DOI: 10.32604/cmc.2023.026952	
27	Development, Characterization, and Burn Wound-Healing Potential of Neomycin-Loaded Clay-Reinforced Nanofibers. ACS Omega	4.00	<a href="https://pubs.acs.org/action/showCitFormats?doi=10.1021/acsomega.3c03593&amp;ref=pdf">https://pubs.acs.org/action/showCitFormats?doi=10.1021/acsomega.3c03593&amp;ref=pdf</a>	

28	In-vitro high-throughput library screening—Kinetics and molecular docking studies of potent inhibitors of $\alpha$ -glucosidase. Plos One	3.8	<a href="https://doi.org/10.1371/journal.pone.0286159">https://doi.org/10.1371/journal.pone.0286159</a>	
29	Phytochemical and antibacterial analyses of <i>Onychium japonicum</i> (Thunb.) Kunze		: <a href="https://doi.org/10.1101/2022.06.14.496165">https://doi.org/10.1101/2022.06.14.496165</a> ;	

### **CONFERENCE PRESENTATIONS AT CUI**

- 1.Oral presentation on "Comparative analysis of toxic metals ( $Pb^{2+}$  and  $Cd^{2+}$ ) in roadside dust and dust deposited 15m away along Motorway (M-3) and National Highway (N-5), Pakistan". Shamyala Nawazish, Aamir Muhammad, Muhammad Yasin Ashraf Muhammad Javid Iqbal and A J Alhassan. Abstract published in First International Symposium on the Himalayas of Pakistan, 2014.
2. Comparative account on  $Pb^{2+}$  concentration emitted from vehicular soot at Motorway (M-3 and National Highway (N-5), Pakistan. Shamyala Nawazish, , Mumtaz Hussain, Arshad Pervez, and Aamir Muhammad. Abstract accepted for presentation, ESDev-2015.
3. Biochemical Profiling of *Eucalyptus melanophloia* L. Muhammad Javid Iqbal, Shamyala Nawazish and Iram Saba. Abstract published in First International Symposium on the Himalayas of Pakistan, 2014.
4. Correlating plant importance values with its use value to asses sustainable use of the western Himalayas Vegetation; A method development.Shujaul M khan, Habib Ahmed, Sue Page,Inayat ur Rehman, Shamyala Nawazish, David Harper, Publisher COMSATS, Abbottabad, Mercury Formations
- 5.Assessment of PM<sub>1</sub>, 2.5 and 10 from Abbottabad to Mansehra City.ESDEV, 2017, CIIT Abbottabad

### **CONFERENCE & WORKSHOPS ATTENDED OTHER THAN CUI:**

- 1.Oral presentation in “Application of Plant Sciences in emerging Scenario” Dept. Of Botany G. C. University Faisalabad. March 20-22, 2006.
2. Poster Presentation in International symposium on “Strategies for Crop improvement against a biotic stresses” University of Agriculture Faisalabad, September 18 -20, 2006.
- 3.International Conference on sustainable crop production on salt –affected land, Saline Agriculture Research Center University of Agriculture Faisalabad. December 4-6, 2006.
4. International symposium on “Prospects of Horticultural Industry in Pakistan” March 28 -30, 2007, Institute of Horticultural Sciences University of Agriculture Faisalabad

5. International Conference on “Role of chemistry for environmental preservation (RCEP 2008)” June 14, 2008.
6. International Conference of Plant Scientist by Pakistan Botanical Society April 21-24, 2008.
7. Conference on Role of Medicinal Plants in Poverty Alleviation, Institute of Horticultural Sciences University of Agriculture Faisalabad May 27, 2008.
8. Poster Presentation in International Conference of Plant Scientists, April 21-21, 2008.
9. 2nd Pakistan Botanic Gardens Conference PBGN, GC University, Lahore February 2, 2009.
10. International Seminar on Preservation and Enhancement of Biodiversity, Application of tree ring technology in Pakistan. GC University Lahore. October, 5-7, 2009.
11. 30<sup>th</sup> Pakistan congress of Zoology. Zoological Society of Pakistan, March 2-4, 2010. University of agriculture Pakistan.
12. Intensive training Course on Remote sensing and Digital image Processing ,Nov.29-26 December,2010. University of agriculture Faisalabad.
13. Hands on training Modern techniques in research on abiotic stress tolerance in Plants. Sept 05-9, 2011. NIAB, Faisalabad.
14. International Conference on Sustainable Food grain Production Challenges and opportunities, October 26-27 October. 2009. University of agriculture Faisalabad.
15. 2<sup>nd</sup> Pakistan Botanic Garden Conference PBGN, G. C. U. F. Lahore.
16. International workshop on Preservation and enhancement of Biodiversity. Applications of tree rings in Pakistan. 5-7 October, 2009.
17. Food security, horticulture export and livestock development, 30<sup>th</sup> August, 2008.
18. International Conference on applied genetics and Biotechnology, 8-10 December, 2011.
19. 57<sup>th</sup> Alumni Association Meet ,16-17 March 2011.
20. Three days workshop on personality development program, effective team management on 13th July, 2013, Islamabad.

### **STUDENT SUPERVISED**

#	Student Name	Thesis Title	MS/Ph D	Supervisor / Co-Supervisor	Status with date: Registered/Completed
1	Sajid Rasheed	Comparative study of vehicular noise and CO emission in Abbottabad and Mansehra city	BS	Supervisor	Completed
2					
	Salman Saleem	Assessment of Particulate matter from Abbottabad to Haripur Hattar	BS	Supervisor	Completed

3	Araib Zahid	Evaluation of perception of labor regarding PM Emission from Abbottabad to Mansehra City	BS	Supervisor	Completed
4	Moniba Zahid Mehmood	Variation in Nematode Community Composition posed by Industrialization & Urbanization	MS	Supervisor	Completed
5	Umer Hafeez	Morphological and Physiological attributes of Spinach genotypes under salinity stress	MS	Supervisor	Completed
6	Rana Zeeshan	Source Variation of Air Pollutants of Mega Cities of Pakistan Using Sentinel 5	BS	Supervisor	Completed
7	Sunela Jadoon	Health Impacts of Air Pollutants on Labor Community of Selected Industrial Units of Hattar Areas of Haripur	Ph.D.	Supervisor	In progress
8	Anila Akhter	Assessment of health impacts of vehicular noise pollution in Abbottabad City	M.S.	Supervisor	Passed out
9	Hina Javed	Correlation analysis of temporal and seasonal variation of stratospheric ozone from Hevellian to Haripur	BS	Supervisor	Pass out
10	Zainub Mir	Risk Assessment of Nitrogen Oxides (NO and NO <sub>2</sub> ) in Selected Hattar Industrial Units	MS	Supervisor	Pass out
11	Iftikhar Aziz	Synopsis in progress	BS	Supervisor	In progress
12	Samia Khan	Synopsis in progress	MS	Supervisor	In progress
13	Iftikhar Aziz	Synopsis approved	BS	Supervisor	In progress
14	Aiza Noman	Synopsis approved	BS	Supervisor	In progress
15	Zainub Mir	Synopsis in Progress	Ph.D.	Supervisor	In progress

Project Title	PI/Co-PI	Amount	Agency	Duration	Status with date: Submitted / Approved / Completed
Gradient analysis of vehicular and industrial emissions along Hattar (Haripur) to Mansehra city at Express Highway, KPK, Pakistan	PI	0.5M	HEC, Islamabad	One and half year	Completed



Identification of air pollutants effects, cultivated community mobilization coupled with initiatives in Abbottabad and Hattar Industrial Estate (NRPU-2017)	PI	3.28M	HEC, Islamabad	2years	Near Completion
Identification and sustainable management of critical medicinal plants	Collaborator		Research project ANSO collaborative program	2 years	submitted
Applied best practices and tools for the assessment and adaptation measures and policies in the context of climate change	Collaborator		Research project ANSO collaborative program	2 years	submitted
Cost effective and green Nanoparticles based removal efficiency of air emissions at Hattar Industrial units, KPK, TTSF-2021	PI	15million	Technology Transfer support Fund. HEC, Islamabad	2 years	Submitted
Nanoparticles dopped fabric filters to mitigate air pollutants impact at Hattar Industrial Estate, NTIF, PSF 2021	PI	20million	Pakistan Science Foundation	2years	Submitted

### **WORKSHOPS ATTENDED AT CUI:**

1.Faculty development workshop in August 2014 at COMSATS, Institute of Information Technology, Abbottabad

2. One day training on emergency responses along BES-5 at Disaster Management Authority, Islamabad, Pakistan on 31 October 2014.

3. Two day's workshop on Women leadership in Higher education. COMSATS, Institute of Information Technology, 21-22 Feb 2015.

### **Training Organised**

1. One day training session on Role of NGIs for Environmental Uplift by Mian Abdul Rasheed, Chief Executive Green Emergency Forum, Islamabad

2. One day training session on soil and water Conservation by District Forest Officer, Abbottabad

### **Labortory Manual Prepared**

1. Fundamentals of Biology (BIO-100)

2. Environment Management System

### **RECENT OR CURRENT RESEARCH PROJECT AT CUI**

1. Gradient analysis of vehicular and Industrial emissions along Hattar (Haripur) to Mansehra city at Express Highway, KPK, Pakistan (0.5M Pkr)

2. HEC-NRPU 2018 entitled "IDENTIFICATION OF AIR POLLUTANTS EFFECTS, CULTIVATED COMMUNITY

MOBILIZATION COUPLED WITH INITIATIVES IN ABBOTTABAD AND HATTAR INDUSTRIAL ESTATE (3.28millions).

### **TASK PERFORMED OTHER THAN ACADEMIA AT CUI**

1. One day training session on Role of NGIs for Environmental Uplift by Green Emergency Forum, Islamabad, 2017,

2. One day training session on soil and water Conservation by District Forest Officer, Abbottabad, 2016.

3. Organizer of Environment Day" Mother earth is crying" 20th December 2017.

4. One day workshop attended in Peshawar, organized by Environment protection Agency attended in 2016.

5. One day seminar attended at Women University at Swabi planned on human induced brain diseases in 2016.

6. Organizer in open house 2015 and Advisor of BES-4.

7. Departmental Organizer at life Sciences enclave at Alumni Reunion 2016.

8. Member of Admission Campaign.

9. Member of DARC.
10. One training session on soil and water conservation,
11. A study tour of Pakistan Forest Institute, Shinkiari Station
12. Member of Quality Enhancement Cell
13. Author of Laboratory manuals "Fundamentals of Biology" and Environment Management System
14. Organizing Committee of ESdev, 25-27 April, 2016
15. Departmental organizer of female sports
16. Collaborative work with EPA, Peshawar and Mass transient Department of Abbottabad
17. Permanent member of proctorial board at CUI, Abbottabad
18. Development of course contents of Climate Change and Global Initiatives
19. Campus In charge of Female sports FALL-2017 (Student Week)
20. Department Female sports Coordinator
22. Eight (08) month Experience of Department operating officer (DOO, ES) from January 2019 to August 2019.
21. Close collaborative work with Mass Transient Department, Shinkiari and Abbottabad and Environment Protection Agency, Abbottabad
22. Member of industry Academia Linkage
23. Member of Corona prevention and advisory Committee.
24. Head of Environment Protection society
25. In- charge of Print and Electronic media of Departmental events
26. Event Management Committee, Members
27. Industry Academia Linkage 2021-2022
28. Internship Committee Members: Focal person of student internship at WASA- BES-7.
28. V-log Competition of Campus student in student week of Fall-2021.

## **AWARDS**

1. Academic Roll of Honor in M.Sc. (Botany)
  2. 1<sup>st</sup> Position in International Health Product Training Collaborative Program of Pakistan and China. July 2013
- Research Productivity Award, 2019  
Services in WSSCA Abbottabad

## **PROFESSIONAL MEMBERSHIP**

- Botanical Society of Pakistan  
Soil Science Society of Pakistan  
Green Emergency Forum, Islamabad  
Clean and Green Pakistan  
Environment Protection Society (Incharge Since , 2018).

## **Community Services**

<https://www.youtube.com/watch?v=Q05rqMKPKws>  
[https://www.youtube.com/watch?v=YXkdnj\\_5xQM](https://www.youtube.com/watch?v=YXkdnj_5xQM)  
<https://www.youtube.com/watch?v=hbRgeY1VIRs>

<https://www.youtube.com/watch?v=nUzk9oSndA>  
<https://www.youtube.com/watch?v=tfJeeJcpg4M>  
[https://www.youtube.com/watch?v=PClh8XDnI\\_k](https://www.youtube.com/watch?v=PClh8XDnI_k)  
<https://www.youtube.com/watch?v=v3MQJFPrBew>  
<https://www.youtube.com/watch?v=KHXIaTiAYTY>

## **REFERENCES**

**Professor Dr. Farid Ullah**

***Head of the Department (Environmental Sciences)***

***COMSATS, Institute of Information Technology, Abbottabad***

***Contact No.0344-5936552***

**Professor Dr.Mumtaz Hussain**

***Department of Botany, University of Agriculture, Faisalabad***

***Contact No:03016002377***

***Contact No. Dr. Shamyla Nawazish: 0312-7575477***