

# CURRICULUM VITAE

**DR UZMA QAISAR**

ASSOCIATE PROFESSOR

School of Biological Sciences, University of the Punjab, Lahore, Pakistan

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## EDUCATION

- Ph.D Centre of Excellence in Molecular Biology, University of the Punjab, Lahore, Pakistan
- M.Phil Centre of Excellence in Molecular Biology, University of the Punjab, Lahore, Pakistan
- M.Sc Botany Department, University of Agriculture, Faisalabad, Pakistan.

## WORK EXPERIENCE

- 2020 - Present **Associate Professor**, School of Biological Sciences, University of the Punjab, Lahore, Pakistan
- 2014 – 2020 **Assistant Professor**, School of Biological Sciences, University of the Punjab, Lahore, Pakistan
- 2013-2014 **Foreign Faculty**, National Centre of Excellence in Molecular Biology (CEMB), University of the Punjab, Lahore, Pakistan
- 2010 - 2013 **Senior Research Associate**, Texas Tech University Health Sciences Center, Lubbock, TX. USA
- 2008 – 2010 **Post-Doctoral Research Associate**, Plant and Soil Sciences, Texas Tech University, Lubbock, TX. USA
- 2007-2008 **Visiting Research Fellow**, Plant Sciences, University of Arizona, Tucson, AZ. USA

## RESEARCH PROJECTS

- Principal Investigator** **Identification and characterization of novel genetic factors for fiber quality improvement in Cotton. SRGP-246**  
Funding Agency Higher Education Commission of Pakistan  
Amount (Rs) 0.5 million
- Principal Investigator** **Controlling the virulence of pathogenic bacteria by local medicinal plants. NRPU-6750**  
Funding Agency Higher Education Commission of Pakistan  
Amount (Rs) 1.94 million
- Principal Investigator** **Testing the Potential of Wrinkled1 transcription factor in fiber quality improvement of cotton. NRPU-7024**  
Funding Agency Higher Education Commission of Pakistan  
Amount (Rs) 2.46 million
- Co-Principal Investigator** **Identification of Molecular Factors Required for Regeneration of Cotton. NRPU-4360**  
Funding Agency Higher Education Commission of Pakistan  
Amount (Rs) 3.45 million

## FELLOWSHIPS AND AWARDS

- **USDA travel grant** to attend **National Dialogue 2019** at COMSTECH, Islamabad
- **ICRA travel grant** to attend **World Cotton Conference 2016** in Goiania Brazil
- **USDA travel grant** to attend **ICGI Cotton Conference 2014** in Wuhan, China
- **Approved PhD Supervisor** by Higher Education Commission of Pakistan.
- **NCGR travel grant** to attend **Genome Dynamics Conference 2013** in Santa Fe, NM. USA
- **UNESCO Fellowship** in Support of Priority Program Areas 2007
- **PhD scholarship** by Higher Education Commission of Pakistan 2004-2009
- **Gold Medal** University of Agriculture Faisalabad. M Sc (Botany) CGPA- 4:00

## PUBLICATIONS

1. Halima Tahir, Nadeem Muhammad, Azeem Intisar, Muhammad Imran Din, **Uzma Qaisar**, Muhammad Abdul Qadir, Noor-ul-ain, Zeeshan Ahmad, Pakeeza Aziz, Muhammad Khurram Shahzad, Irshad Hussain. 2021. Essential oil composition and antibacterial activity of *Canarium strictum* Roxb resin. *Plant Biosystems*. <https://doi.org/10.1080/11263504.2020.1869114>
2. Shagufta Kamal, Naheed Akhter, Nazia Yaqoob, **Uzma Qaisar**, Ismat Bibi, Saira Shahzadi, Aqsa Nadeem, Muhamamd Azeem. 2020. Quantification and characterization of Myo-inositol in locally available peanuts and pine nuts in Pakistan. *Pakistan Journal of Pharmaceutical Sciences*. Vol.33 (3): 1289-1295.
3. Asma Manzoor, **Uzma Qaisar**, Zahida Parveen, Saima Siddique, Andleeb Anwar Sardar, Nabila Ishaq. 2020. In vitro anticancer and antioxidant potential of *Cestrum* species. *Pakistan Journal of Pharmaceutical Sciences*. Vol.33 (4): 147-153
4. Mahnoor Imran, Maria Butt, Abdul Hannan, Asma Manzoor and **Uzma Qaisar\***. 2020. Gene editing: A potential tool to enhance field crop production. *International Journal of Biotech Trends and Technology (IJBT)* – Vol.10 (1): 72-82.
5. Anam Iftikhar, Azka Asif, Asma Manzoor, Muhammad Azeem, Naeem Rashid and **Uzma Qaisar\***. 2020. Mutation in *pvcABCD* operon of *Pseudomonas aeruginosa* modulates chloramphenicol resistance and *mexEF-OprN* efflux system. *Microbial Pathogenesis*. 149: 104491.
6. Mahnoor Imran, Shaher Bano, Asma Manzoor, Muhammad Azeem, Tanzeela Rehman, Samina Yousaf, Maria But, Tousif Hussain and **Uzma Qaisar\***. 2020. Ectopic expression of fiber related *GbwriI* complements seed phenotype in *Arabidopsis thaliana*. *International Journal of Agriculture & Biology*. 25: 123-130.
7. Khadija Rafiq, Muhammad Sohail Akram, Muhammad Shahid, **Uzma Qaisar**, Naeem Rashid. Enhancement of salt tolerance in maize (*Zea mays* L.) using locally isolated *Bacillus* sp. SR-2-1/1. *Biologia*. 1-12.
8. Rabia Mirza, Muhammed Azeem and **Uzma Qaisar\***. Influence of *Peganum harmala* peptides on the transcriptional activity of biofilm related genes in sensitive and resistant strains of *Pseudomonas aeruginosa* and *Staphylococcus aureus*. *Pakistan Journal of Pharmaceutical Sciences*, 32(5): 2341-2345
9. Muhammad Usman Qamar, Ghulam Mustafa, **Uzma Qaisar**, Farrukh Azeem. 2019. Molecular detection of *bla<sub>NDM</sub>* and *bla<sub>VIM</sub>* in clinically isolated multi-drug resistant *Escherichia coli* in Pakistan. *Pakistan Journal of Pharmaceutical Sciences*, 32(5): 2305-2309
10. Tauseef Anwar, Hira Qureshi, Nida Parveen, Raheel Bashir, **Uzma Qaisar**, Muhammad Munazir. 2019. Evaluation of bioherbicidal potential of *Carica papaya* leaves. *Brazilian Journal of Biology*. <https://doi.org/10.1590/1519-6984.216359>
11. Maira Afzal, Asima Tayyeb, **Uzma Qaisar\***. 2019. Commercial Applications of Plant Pigments. 2019. *International journal of biotech trends and technology*. 9 (3)
12. **Uzma Qaisar\***. 2019. *Peganum harmala*: a rich source of antimicrobial agents. *International journal of biotech trends and technology*. 9 (4)
13. Azka Asif, Anam Iftikhar, Abdul Hamood, Jane A. Colmer-Hamood and **Uzma Qaisar\***. 2018. Isonitrile-functionalized tyrosine modulates swarming motility and quorum sensing in *Pseudomonas aeruginosa*. *Microbial pathogenesis*. 127, 288-295.
14. Asima Tayyeb, **Uzma Qaisar**, Muhammad ShahJahan, Hanfa Ashfaq and Zafar Abbas Shah. 2018. FASN expression correlation analysis to Anti-cancer drugs. *International Journal of Current Research*.

15. Rida Khalid, Qudsia Jaffar, Asima Tayyeb and **Uzma Qaisar\***. 2018. Peganum harmala peptides (PhAMP) impede bacterial growth and biofilm formation in burn and surgical wound pathogens. *Pakistan Journal of Pharmaceutical Sciences*. 31(6), 2597-2605
16. Muhammad Qasim, Muhammad Azeem, Muhammad Zubair, **Uzma Qaisar**, Asad Ali and Farrukh Azeem. 2018. Phylogenetic analysis of the Trithorax homologs and related proteins in *Cicer arietinum* *International Journal of Agriculture and Biology* 20 (3), 575-582.
17. Saba Khurshid, Amna Shoaib, Arshad Javaid, **Uzma Qaisar\***. 2018. Antifungal activity of aerial parts of *Cenchrus pennisetiformis* against *fusarium oxysporum* f. sp. *Lycopersici*. *Plant Daninha*. Doi: 10.1590/S0100-83582018360100023
18. **Uzma Qaisar\***, Fozia Akhtar, Muhammed Azeem and Samina Yousaf. 2017. Studies on involvement of Wrinkled1 transcription factor in the development of extra-long staple in cotton. *Indian Journal of Genetics and Plant Breeding (The)* 77 (2), 298-303.
19. Saba Khurshid, Amna Shoaib, Arshad Javaid, Fozia Akhtar, Muhammad Shafiq, **Uzma Qaisar\***. 2017. Management of Fusarium wilt of tomato by soil amendment with *Cenchrus pennisetiformis* under chromium stress. *Physiological and Molecular Plant Pathology* 97, 58-68.
20. Saba Khurshid, Amna Shoaib, Arshad Javaid, **Uzma Qaisar\***. 2016. Antifungal activity of ethyl acetate extracts of *Cenchrus pennisetiformis* in the presence of Cr (III) and Cr (VI). *Pakistan Journal of Phytopathology*. 28 (2), 213-221.
21. **Uzma Qaisar\***, Cassandra J Kruczek, Muhammed Azeem, Nasir Javaid, Jane A Colmer-Hamood, Abdul N Hamood. 2016. The *Pseudomonas aeruginosa* extracellular secondary metabolite, Paerucumarin, chelates iron and is not localized to extracellular membrane vesicles. *Journal of Microbiology*. 54 (8), 573-581.
22. Saba Khurshid, Amna Shoaib, Arshad Javaid, **Uzma Qaisar\***. 2016. Fungicidal potential of allelopathic weed *cenchrus pennisetiformis* on growth of *fusarium oxysporum* f. sp. *lycopersici* under chromium stress. *Planta Daninha*. 34 (3), 453-463.
23. Cassandra Kruczek, **Uzma Qaisar**, Jane A. Colmer-Hamood, and Abdul N. Hamood. 2014. Serum influences the expression of *Pseudomonas aeruginosa* quorum sensing genes and QS-controlled virulence genes during early and late stages of growth. *MicrobiologyOpen*. 3(1), 64-79.
24. Cecily L. Haley, **Uzma Qaisar**, Jane A. Colmer-Hamood and Abdul N. Hamood. 2014. Mucin inhibits *Pseudomonas aeruginosa* biofilm formation by significantly enhancing twitching motility. *Canadian Journal of Microbiology*. 60 (3): 155-166.
25. **Uzma Qaisar\***, Liming Luo, Cecily L. Haley, Sean F. Brady, Nancy L. Carty, Jane A. Colmer-Hamood and Abdul N. Hamood. 2013. The pvc operon regulates the expression of the *Pseudomonas aeruginosa* fimbrial chaperone/usher pathway (cup) genes. *PLoS ONE* 8(4): e62735. doi:10.1371/journal.pone.0062735.
26. **Uzma Qaisar\***, Shu Wang, Xiangling Yin, Paula Grammas. 2012. Gene Expression Profiling in Microvessels Isolated from Human Alzheimer's disease Brains. *JAD*. 31(1):193-205
27. **Uzma Qaisar\***, Muhammad Irfan, Asma Meqbool, Muzna Zahoor, Muhammad Younas Khan, Bushra Rashid, Sheikh Riazuddin, and Tayyab Husnain. 2010. Identification, sequencing and characterization of a stress induced homologue of fructose bisphosphate aldolase from cotton. *Can. J Plant Sci*. 90 (1), 41-48.
28. Roger A. Barthelson, **Uzma Qaisar** and David W. Galbraith. 2010. Functional Analysis of the *Gossypium arboreum* Genome. *Plant Mol Biol Rep*. 28 (2): 334-343.
29. Muzna Zahur, Asma Maqbool, Muhammad Irfan, Muhammad Younas Khan Barozai, **Uzma Qaisar**, Bushra Rashid, Tayyab Husnain and Shiekh Riazuddin. 2009. Functional analysis of cotton small heat shock protein promoter region in response to abiotic stresses in tobacco using *Agrobacterium*-mediated transient assay. *Mol Biol Rep* 36:1915–1921.
30. Muhammad Younas Khan Barozai, Muhammad Irfan, Rizwan Yousaf, Imran Ali, **Uzma Qaisar**, Asma Maqbool, Muzna Zahoor, Bushra Rashid, Tayyab Hussnain and Sheikh Riazuddin. 2008. Identification of micro-RNAs in cotton. *Plant Physi and Biochem*. 46:739-751
31. Asma Maqbool, Muzna Zahur, Muhammad Irfan, **Uzma Qaisar**, Bushra Rashid, Tayyab Husnain and Shiekh Riazuddin. 2007. Identification, Characterization and Expression of Drought Related alpha-Crystalline Heat Shock Protein Gene (GHSP26) from Desi Cotton. *Crop Sci* 47:2437-2444.

\* indicates main author

## **BOOKS / BOOK CHAPTERS PUBLISHED**

1. Tanzeela Rehman and **Uzma Qaisar**, Site Directed Mutagenesis in Plants. 2020. *Mutagenesis, Cytotoxicity and Crop Improvement*. Cambridge Scholars Publishing Ltd. UK. (In Press)

2. Samina Yousaf, Tanzeela Rehman and **Uzma Qaisar**. Mutagenesis and Plant Breeding in 21<sup>st</sup> Century. 2020. Mutagenesis, Cytotoxicity and Crop Improvement. Cambridge Scholars Publishing Ltd. UK. (In Press).
3. **Uzma Qaisar**, Samina Yousaf, Tanzeela Rehman, Anila Zainab, Asima Tayyeb. 2017. Transcriptome Analysis and Genetic Engineering. Applications of RNA-Seq and Omics Strategies-From Microorganisms to Human Health. InTech.pp. 213-225.
4. Asima Tayyeb, Fareeha Azam, Rabia Nisar, Rabia Nawaz, **Uzma Qaisar**, Gibran Ali. 2017. Regenerative Medicine in Liver Cirrhosis: Promises and Pitfalls. Liver Cirrhosis-Update and Current Challenges.233-256
5. **Uzma Qaisar**, Asima Tayyeb and Tariq Ahmad Bhat. 2017. Techniques of chromosome studies. Chromosome Structure and Aberrations. Springer. 307-330
6. Abdul Qayyum Rao. Salah ud Din, Sidra Akhtar, Muhammad Bilal Sarwar, Mukhtar Ahmed, Bushra Rashid, **Uzma Qaisar**, Ahmed Ali Shahid, Idrees Ahmed Nasir and Tayyab Husnain. Genomics of Salinity tolerance in plants. 2016. Intech Publishers.
7. **Uzma Qaisar**. 2012. Drought Tolerance. Lambert Academic Publishing AG & Co. KG. ISBN-13: 9783848404636 (<http://www.barnesandnoble.com/w/drought-toleranceuzma-qaisar/1108828331?ean=9783848404636>)

### **ORAL PRESENTATIONS IN INTERNATIONAL CONFERENCES**

1. **Uzma Qaisar**. 6-8 Nov 2019. Genetic control of cotton fiber development in diploid and tetraploid cotton varieties. Recent Innovations in Molecular Sciences, University of the Punjab, Lahore.
2. **Uzma Qaisar**. 26-27 Nov 2018. Production of disease free and improved Fiber quality cotton in Pakistan. 2nd INTERNATIONAL CONFERENCE ON PLANT SCIENCES, Government College University, Lahore. 5-7 Dec 2018
3. **Uzma Qaisar**. 2018. Sino-Pak international conference on innovations in cotton breeding and biotechnology. Multan, Pakistan
4. **Uzma Qaisar**. 2017. International Conference on Agricultural and Food Science (ICAFS2017), Virtual University Lahore. Pakistan.
5. **Uzma Qaisar**. 2016. Involvement of *Wrinkled-1* Transcription Factor in Fiber Development of Extra Long Staple (ELS). World Cotton Research Conference 2016, Goiania, Brazil.
6. **Uzma Qaisar**. 2015 International Symposium on Advances in Molecular Biology of Plants and Health Sciences. CEMB, University of the Punjab, Lahore. Pakistan
7. **Uzma Qaisar**. 2014. Introduction of polymerase chain reaction, types and its use in GMO detection. Development and testing of transgenic Cotton for leaf curl virus disease resistance” held at CEMB, University of the Punjab, Lahore. Pakistan
8. **Uzma Qaisar**, Jane Colmer-Hamood and Abdul Hamood. 2013. Paerucumarin, a new Pseudomonas aeruginosa molecule capable of binding but not transporting iron intracellularly. Genome Dynamics Conference, March 21-23, 2013 at the Inn & Spa at Loretto in Santa Fe, NM. USA
9. Jena-Claire Auten, **Uzma Qaisar**, Jane C. Hamood, Abdul Hamood. 2013. Functional analysis of the transcriptional response of Pseudomonas aeruginosa to growth in whole human blood. American Society for Microbiology General Meeting.
10. **Uzma Qaisar**, Jane Colmer-Hamood and Abdul Hamood. 2013. Paerucumarin, a new Pseudomonas aeruginosa molecule capable of binding but not transporting iron intracellularly. Annual Research symposium of Texas Tech University Health Sciences Center, Lubbock, TX. USA
11. W.Shalika D.K. Silva, Nancy L. Carty, **Uzma Qaisar**, Abdul N. Hamood and Michael J.D. San Francisco. 2011. Analysis of *Batrachochytrium dendrobatidis* gene expression in planktonic versus biofilm life cycle stages. Texas Tech Annual Biological Sciences Symposium, Lubbock, TX. USA
12. Thea Wilkins, Ingrid E. Lindquist. **Uzma Qaisar**, Arvind K. Bharti, Terry Wheeler, Gregory D. May and Joann Mudge. 2010. Early Molecular Events in Conferring Resistance to Verticillium Wilt Disease in Pima Cotton Revealed by Next-Generation Sequencing. Beltwide Cotton Conference.
13. Thea A Wilkins, Ingrid E Lindquist , **Uzma Qaisar**, Arvind K Bharti , Terry Wheeler , Gregory D May and Joann Mudge. 2010. Early Molecular Events in Resistance to Verticillium Wilt Disease Revealed By Solexa Transcriptomics in Pima Cotton. Plant & Animal Genomes XVIII Conference. San Diego, CA. USA
14. **Uzma Qaisar**, Terry Wheeler and Thea A. Wilkins. 2009. Approach to Identify Sources of Verticillium resistance in Cotton. Beltwide Cotton Conference 2009. San Antonio, TX. USA

## **MICROARRAY CHIPS DESIGNED**

1. An expression microarray chip design was created with the name “Pseudomonas modified” and ID “032031” on Jan 6, 2011. This design consists of 8 arrays and each array accommodates 15744 unique features representing all the genes present on genomic DNA of MPAO1 strain of *Pseudomonas aeruginosa*. The design was published on earray database on Agilent portal (earray.chem.agilent.com)
2. Another expression microarray chip design was created with the name “PA14\_Pseudomonas” and design ID “033961”. On April 27, 2011. This design consists of 8 arrays and each array accommodates 15744 unique features representing all the genes present on genomic DNA of PA14 strain of *Pseudomonas aeruginosa*. The design was published on earray database on Agilent portal (earray.chem.agilent.com)

## **SUBMISSION TO NCBI PORTAL**

- **Global Transcriptome analysis of Alzheimer’s brain microvessel.** Accession number GSE45596. March 29, 2013
- **Global Transcriptome analysis of *pvcA* mutant of *Pseudomonas aeruginosa* as compared to parent.** Accession number GSE45973 on April 10, 2013.
- 1411 Novel Express Sequence Tags (EST's). Accession Number cembMI0001-cembMI1401 and cembu01-cembu11

### **Full Length Gene Sequences:**

1. *Gossypium arboreum* plastid fructose 1,6 biphosphate aldolase (Aldp) gene  
gi|166203460|gb|EU107768.1|[166203460]
2. *Gossypium arboreum* plastid fructose 1,6 biphosphate aldolase class 1 (ALDP) mRNA  
gi|126571483|gb|EF105116.1|[126571483]

## **EDITOR/REVIEWER FOR SCIENTIFIC JOURNALS**

### **Editor**

1. South Asian Journal of Life Sciences
2. Pure and Applied Biology (PAB)

### **Reviewer**

1. Frontiers in Microbiology
2. Molecular Biology Reports,
3. African Journal of Biotechnology
4. Pakistan journal of Zoology
5. African Journal of Pharmacy and Pharmacology
6. PLOSone
7. Current Plant Biology

### **Scientific Societies**

1. Botanical Society of America
2. Indian Society of Genetics and Plant Breeding
3. American Society of Microbiology